3dcfattee

Issue 074 October 2011

### **Victor Hugo**

3dcreative interview this wonderful 3d environment artist

# Raphael Boyon, Jason Lin, Caio César & more!

Gallery - 10 of the best images from around the world!

### "Guitarist"

Project Overview by Gun Phil Park

The number one training resource for games characters is here again, and with **Gavin Goulden** at the helm **Sword Master 2** is a must for any CG enthusiast.





### **Futuristic Vehicles**

**Dhilip Somesh** continues where he left off I with the second chapter of our **Futuristic Vehicle** tutorial series, this month creating a sci-fi racer.



### **Cartoon Animals**

**Luis Arizaga Rico** brings us the forth installment of our **Cartoon Animals** tutorial series by creating a fantastic and amusing **Squid** character.



### **Vue Environment Creation**

Having already given us two excellent tutorials **Alex Popescu** carries on his good work this month by creating an epic underwater cave.





### EDITORIAL

Every now and then a magazine stands out as being particularly good. That is not to say that there is ever a bad issue, but this month's 3Dcreative is truly outstanding.

I am going to start by talking about something really exciting. Many of you will

have been reading our magazine for years now and will be more than familiar with our Swordmaster series which was originally in the magazine in 2006. In fact for many of you following the Swordmaster series may have been your first attempt at 3D. Well the Swordmaster has been updated and is back better than ever! Ignacio Bazan Lazcano has created some stunning concept work for our new character which has been handed to the outrageously talented **Gavin Goulden**. Gavin will be talking us through turning the concept art into 3D games characters ready for action! Gavin will be handling the series in both 3ds Max and Maya, and will provide step by step instructions for everything that he does. Gavin will also be sharing tips which he has picked up from years in the CG industry, that you can't put a price on. This really is a great series worth following so I hope you enjoy it. I look forward to seeing all of your games characters.

Last month we started the new series about creating futuristic vehicles. This is a really interesting series which encourages you to use 3D to create stunning 2D visuals. Using 3D as a base **Dhilip Somesh** talks us through how to use Photoshop to add the detail and color to your images with jaw dropping results. In this issue Dhilip shows us how to make a cool sci-fi racer which he has called the Vectomer.

Our cartoon animal's series has been a lot of fun and the final images have been great and this month's cartoon animal is no exception. In this issue we venture the deeps to see how **Luis Arigaza Rico** created his cool cartoon Squid.

Alex Popescu has been doing an amazing job of talking us through how to create stunning visuals using Vue. Alex has created some stunning images as well as giving us great advice as to how we can do the same. In this issue Alex talks us through creating an epic underwater cave and shows us how he brings all of the elements together to make a cave look as daunting and impressive as it would in the real world.

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10 of the Best 3D Artworks



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CARTOON ANIMALS
Chapter 4: Squid



### VUE ENVIRONMENT CREATION Chapter 3: The Cave



"GUITARIST"
Project Overview by Gun Phil Park



"BARBERSHOP BEAR"
Digital Art Masters: Volume 5 - Free Chapter



SWORDMASTER 2 Chapter 1: Base Model





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#### FREE STUFF!

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This month's interview gives us an opportunity to learn a little about a great and very interesting artist by the name of **Victor Hugo**. Victor has submitted some brilliant images to the 3DTotal galleries recently so we thought we would catch up with him and find out a little about him. Victor has been great at answering our questions and even tells us about one of the funny answers he gave in his first interview for a CG job.

This month's making of is by **Gun Phil Park** who tells us how he captured the essence of Jimi Hendrix in his image the Guitarist. We also have a stunning gallery featuring work by **Eugenio Garcia**, **Caio César**, **Andrew Hickinbottom** and **Igor Kudryavtsev**. I am sure you will agree with me, this is a really good on!



### SETTING UP YOUR PDF READER

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: DOWNLOAD!

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

- 1. Open the magazine in Reader;
- 2. Go to the  $\overline{VIEW}$  menu, then  $\overline{PAGE}$   $\overline{DISPLAY}$ ;
- 3. Select TWO-UP CONTINUOUS, making sure that SHOW COVER PAGE is also selected.

That's it!

# Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!











### CONTRIBUTING ARTISTS

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in 3DCreative magazine, please contact: simon@3dtotal.com



### VICTOR HUGO

Victor Hugo is a 25 year old self-taught 3D generalist from Brazil, where he works at Techno Image Studio. He started his career



in 2005, and from 2008 to the present he's focused in advertising and character illustration.

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### GAVIN GOULDEN

Gavin Goulden is a character artist for Irrational Games working on Bioshock Infinite. With 6 years games industry

experience, he has contributed character and environment art assets to multiple titles including Dead Rising 2, The Bigs 2, Damnation and FEAR 2.

http://www.gavimage.com/ gavin@gavimage.com



### LUIS Arizaga Rico

Luis is an artist who specializes in design, illustration and the creation of characters for animation. He was immersed in art at a



very young age and is a self-taught digital artist. His animation project "Holymonks" was official selected in the Annecy international animation festival and Siggraph Asia (HongKong).

http://www.digital-rebel.com/ arizaga@digital-rebel.com



### GUN Phil Park

Gun Phil Park was born in Seoul Korea. He majored in Computer Arts at the Academy of Art University in

San Francisco. Since University he has been working in the game and film industry as a 3D character artist in U.S.

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### ALEX Popescu

Alex Popescu works in the visual effects industry specializing in film work. He concentrates on digital set creation,



environment design and concept art. He also works on set extensions and 2D matte paintings. At the moment he works as a Lead DMP\
Environment artist at MPC London.

http://www.alexpopescu.net/alex@alexpopescu.net

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30 HILLIAN STATE MODELED SCULPTED RENDERED in 🖄 ZBRUSH Join our online artist community at Pixologic\* makers of ZBRUSH

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## 3D CHARACTER DESIGN SERIES WITH SCOTT PATTON

In this two volume series, Scott Patton shows the processes he uses to create a 3D character for feature films. The first volume explores Patton's fast and efficient method for concept sculpting, skipping the 2D sketch phase all together and designing the character entirely within ZBrush®. He covers everything from blocking out the forms and fleshing out the muscles, to adding props, detailing with alphas and posing the character. The second volume covers methods for creating a final color rendering using ZBrush and Photoshop®. Patton shows how he squeezes the most from ZBrush's powerful renderer to create both a wide and close-up shot of the character. He then shares creative Photoshop tips and tricks to quickly get to a finished piece of concept art from the ZBrush renders, covering topics such as adding and refining skin texture, hair, eyes, shadows and scars. Patton also discusses how to create backgrounds that enhance the character and overall composition.

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# Hi Victor, could you start by telling us about yourself and how you developed artistically from a child to the present day?

When I was at school the teachers always complained to my mother that I was not a focused ("He's always drawing in his exercise book, and never pays attention to the classes... but strangely he always gets a regular grade on his tests.") This is how my parents discovered my "self-taught" skill.

When I was 13 my dad gave me a trial version of 3ds Max R1 and said, "Remember all those awesome games that you play? They are made with this! Give it a try!" I spent half an hour playing with it and thought to myself "I'm never gonna make money with this! It's so boring!" and forgot all about 3D. In addition to drawing I'd always liked history, so I decided I would study it at university, but in Brazil you need to pass a text if you want to go to university and I was I was unsuccessful!

After my unsuccessful attempt I spent my summer vacation searching the internet for

something to do with my future (I was without a job and had failed to get into a university, so this was a bad time). In my last week of vacation I found www.3dtotal.com and its awesome Joan of Arc tutorial, which was a big blessing! I made the first half of the tutorial and applied for a job vacancy as a modeler at Digital Light (a famous ArchViz studio here in Brazil). I don't know what I was thinking at that point.

During the interview the interviewer asked me, "Do you know how to work with poly modeling?" and I answered, "Nope, only with 3ds Max". I still don't know why he gave me that job.

So I got a job without any concrete knowledge of modeling, and with two days left until my first day at work it was time to learn 3D for real! I spent those two days reading every starter tutorial on 3dtotal.com and used them to get some knowledge of 3ds Max. I started digging a little deeper into the software – I enjoyed that! [Laughs]. When someone taught me a technique, the first thing that came into my mind was, "Ok, this technique is good, but can



I improve it? Where else can I use it? And what happens if I mix it with that other one...". This way of thinking helped me improve what I had learned, and also helped me to learn things by myself and develop new techniques. This step was very important in my career because I was able to improve the workflow in the studio that (miraculously) hired me, and it also helped me as a light/shader artist in there. I fell in love with 3D on that day!



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Since then I've started to not only learn new techniques and improve them, but also observe object surfaces, lighting and paintings. I've also started to observe the lighting used in movies. So much drama can be achieved with well placed lighting.

After three years working with ArchViz I felt that it was time to learn something different and moved from ArchViz to advertising. In 2008 I got a job at Z-Axis 3D studio (a studio focused on hyper-realism 3D here in Brazil). There I improved my software skills and also learned a lot of things about the advertising industry! At the same time I started trying some character illustration, which is something that I've always admired in CG art (I'm a Pixar fan!).

studio here in Brazil and freelancing for We Are Royale, an awesome CG and motion graphics studio in California!

# What marked the beginning of your involvement in 3D and from where did you get your first piece of inspiration and motivation?

As I said before my original motivation was my need for a job, but my passion started with video games. I still remember the first time I saw a cinematic from *Final Fantasy VII*. The death of Aerith... man, that was such a sad and beautiful scene! Game cinematics always caught my attention (I hated it when someone came and pressed start in the middle of a cinematic!). When I was a kid I used to draw on every piece of paper that I found. I never developed my 2D skills, but I got a lot of inspiration from drawing.



I'm working at Technolmage, a famous CG





# Tell us about your work process. How do you start your project once you have an idea?

The original idea usually comes from a theme that I like (usually nerdy stuff and games). If I'm going to spend some time looking at something, it's better if it's something that I enjoy. I'm not that good at drawing, so I don't spend much

time with 2D concepts. I start by blocking in some primitives to achieve a good composition. Meanwhile I gather some references from the web that will help me a lot with a ZBrush sketch. Most of my ideas appear during the project. For example, on *I Am Captain America*, I saw that Skottie Young had placed a dropped milk box on the grass. The first thing that came to

my mind was Milky, from Blur's "Coffee and TV" music video (the band, not the studio), and straight away I felt the need to put that easter egg in there! I love looking at the details and seeing work filled with references for the nerd crowd! The same goes for *Magneto*. When I was decorating his room I saw a great opportunity to fill it with references to easter eggs!



Right now I'm starting on a new idea – it's a short movie based on one of my images called *Here Comes a New Challenger* and it's gonna be a fight between Ryu and Hugo! I'm chatting

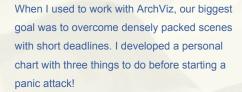


with a friend who is co-producing it with me and also remodeling and improving the shaders. I've learned some new tricks since January, and I'm hoping to do some ground-breaking stuff!

You've certainly learned a lot from your own experiences in the work environment. Do you have any industry tips on customizing and optimizing your workflow and render times?

Sure. In my opinion the most important thing is to always, and I mean always, ask for other people's opinions! I used to work on my own and rarely ask for opinions during work production. This was one of my greatest mistakes. Everyone has something to teach, and everyone has something to learn! Usually

when I'm starting to enjoy the overall result of my work, I start to ask for my workmates' opinions (and actually the Technolmage staff is made up of awesome artists and great friends too). I also ask my wife. She doesn't work with CG so her point of view is completely different; she doesn't care about polygons, wireframes and all that technical stuff. Her feedback will be like, "Hmm... his sneakers... you have made a mistake with his shoelaces" and this is very helpful. Therefore the first and most important tip that I could give to anyone is to ask for people's opinions. You don't have to agree with everyone, because it's your work and you need to keep your goal in mind, but there's always something that can help your work.



- 1 Optimize your models. It's always awesome to create a model full of details and impress everyone with your 2,000,000 vertices, but when you have a short deadline and your computer wasn't made for NASA, you will need to optimize your models. Try thinking about the whole process. What do you really need to model? What can you do with opacity maps? What can you solve with renderable splines? (splines in 3ds Max are awesome, but somewhat underrated). 3ds Max also has "build up" modifiers; you can save a lot of time if you know how to use them wisely.
- 2 Know your render engine. I admit that I don't know every parameter in V-Ray, but now I am more familiar with it I know how to optimize the render time according to my needs. On the V-Ray help page they talk about global V-Ray parameters and it's awesome. But it is slow; too slow if you are working with a short deadline. One day I saw a guy bragging that his render (of a scene that wasn't complex) took 27 hours! It's beautiful, but when your boss is pushing you because the client is pushing him, you can't do this. I take time to try different parameters and lower some numbers and raise others to see what happens. Spend some time trying to achieve quick results. It's one of the boring parts, but it's useful when you are desperate.
- 3 "Keep 'em close". This one is more preventive. You can optimize your workflow a lot if you make your tools more familiar and instinctive. To create a editable poly in 3ds Max you need to create a box > right click > Convert to > Edit Poly > click in Edit Poly on your modifier palette > choose the Move tool > move the vertex. This takes way too long! What if you just Create a box > press Ctrl+E > press 1 > press W > Move the vertex. This is much better! The Ctrl+E shortcut I've created to fit my needs; all the others are already set in 3ds Max. Every time I find myself using a tool regularly



my first priority is to set a shortcut to it. By using shortcuts you can improve your speed. Always try to set a couple of essential shortcuts and also make your app interface more friendly, so you don't have to spend time searching for a tool and lose your focus. And one last tip: "Do it without care, and you will have to do it twice."

# A few of your recent images portray childhood in a great way. What plays the key role in their realistic toony look?

I think that the most important thing is what motivates the kids in the images! Kids don't have to concern themselves with politics, bills and adult stuff. To them the most important thing is the here and now. Therefore the Captain America kid truly believes that he can step in and face the bully and this is the most important thing in his whole life! If your characters don't express how much they believe in their motivations, your cartoon will never be believable. I can talk about proportions, styling and all that technical stuff, but I truly believe that those things aren't that important if you can tell a story with your artwork. You need to create a situation for your scene, not just develop a stylish character, put him in a pose and voilà. For example, one of the most interesting characters I saw in a cartoon was Syndrome from The Incredibles. Have you ever noticed how believable he is? When he reveals to Mr. Incredible his plan and says, "Everyone can be super! And when everyone's super, no-one will be" - that gave me the chills! [Laughs]! It wasn't only the render, or the shaders, or any technical stuff that gave Syndrome the realistic toony look; his belief and his acting made him awesome too.

Walt Disney once said, "Adults are just kids grown up". I'm 25 now, but I still love to play Sonic 2 and laugh at the Road Runner and Wile E. Coyote TV shows! It isn't too hard to see things through children's eyes.

We've covered the different aspects of your creative process, but which part do you like most and what takes up most of your time?

My favorite part is the lighting and shaders. In my opinion you can save or destroy your scene





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at this part of the process. I'm not saying that the other parts aren't important, but I see a lot of work around the web by artists with some awesome models which don't have the impact they should. Most of the time it is because they have used overcast lighting when it would have been better to use more dramatic lighting or some generic shaders. This is the part that takes up most of my time. I love spending time testing and thinking about the best way to get a good result in the quickest time possible! It's quite fun and can be very useful too!

The importance of using shaders well is clear when looking at CG artwork as you mentioned. How do you get started on this type of work, and how do you decide if you are happy with what you have?

I started to develop my shader skills in my first job. I noticed the relationship between light and shaders and how easy it was to notice the 3D in an image if the shaders weren't convincing. To create a good shader you have to fully

understand what you are creating, and I'm not just talking about the glossiness parameters. You first need to understand how the material that you're going to create works. Does it have some kind of coat? Why it is so glossy? This is a big step in shader creation.

There are two more things you will need if you want to improve your shader skills and they are patience and time. If you have time to improve your shader, fight the laziness and do it! It is a curious thing, but when I'm stuck in a traffic jam I usually do two things. One is to play *Tekken 6* on my PSP and the other is to start looking around for different lighting situations and observe how they affect the materials around them. I try to create the shader in my head, just like a render. It's a simple and very effective study.

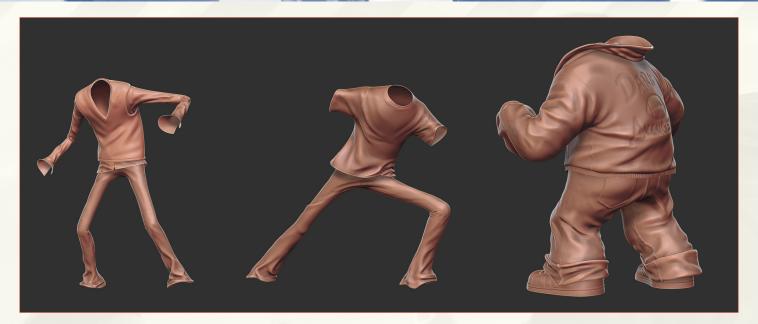
If you find yourself thinking, "But I have already done all that and my shaders still aren't that good", then Google it! Search for references on the web, or if you have the material near

you then spend some time looking at it and see how it behaves in different lighting situations. This can really help you out!

You have done a lot of different jobs, and even some work out of your comfort zone.

Will you be impressing us any time soon with, let's say, a photorealistic approach or something similar?

My job means I have to do a lot of photorealistic work, but it isn't something that I really enjoy doing. To me it's like working with a lack of options. One thing that I've never tried was to do something animated with cartoon characters and that's my next step. The idea came from a friend who said, "Dude, if I was the CEO of Capcom, I would hire you to do a *Street Fighter* short movie" and I thought, why not? I'm really hoping to have some material to share soon. Right now I only have Ryu's remake with fixed anatomy, which has been optimized and has some improved shaders. There are also a couple of secrets that I have started on, but



I can't tell you about that now! [Laughs]. I'm planning to publish a teaser trailer in December, so stay tuned!

You mentioned the importance of comments and criticisms once you have developed a piece. Do you enjoy correcting and improving your artwork or, after seeing it finished, is it difficult to go back to the beginning?

Sometimes it is hard to keep in the frustration when you know that the comments mean that

you will have to go back and go through a load of boring steps. But if you keep in your mind that most comments are intended to improve your work you can always benefit from them. If you remember this it can be more enjoyable. When I was finishing Captain America my workmates made a lot of comments about things that my eyes were already accustomed to and so I wasn't seeing them as errors anymore. I think Captain America's pants were modeled three times and the bully's pants twice. I made two different versions of the grass and a lot



of hair tests and changes in post-production.

Like I've said before, you don't have to accept every comment, it's your work. This is the case for everyone except my wife – she is a little stubborn if she thinks she is right!

# Thank you for all the insight and inspiring words Victor. I hope to see more of your stunning artwork soon!

Thank you for the awesome opportunity to show a little more of my work and chat about it. The first question reminded me of some good times! I would also like to thank everyone who helped my progress in some way!



For more from this artist visit: http://torugo.wordpress.com/

Or contact him at: hugo2504@hotmail.com

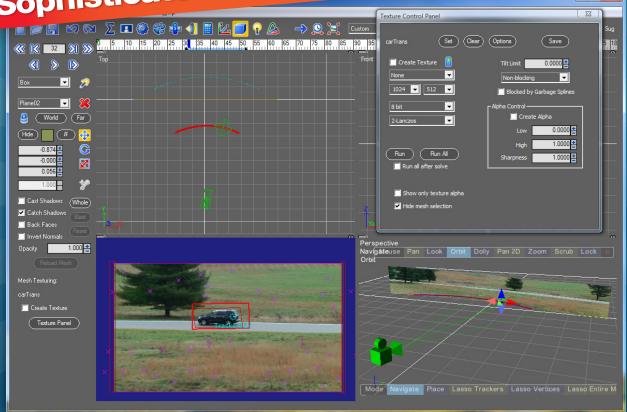
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### LOMO OWL

### Carlson Woon

carlsonwkk@hotmail.com (Above)

### LIVING ROOM WIDE VIEW 1

### Matthew Hardman

hardman.matthew@yahoo.co.uk (Below)







### EARTH POLICE

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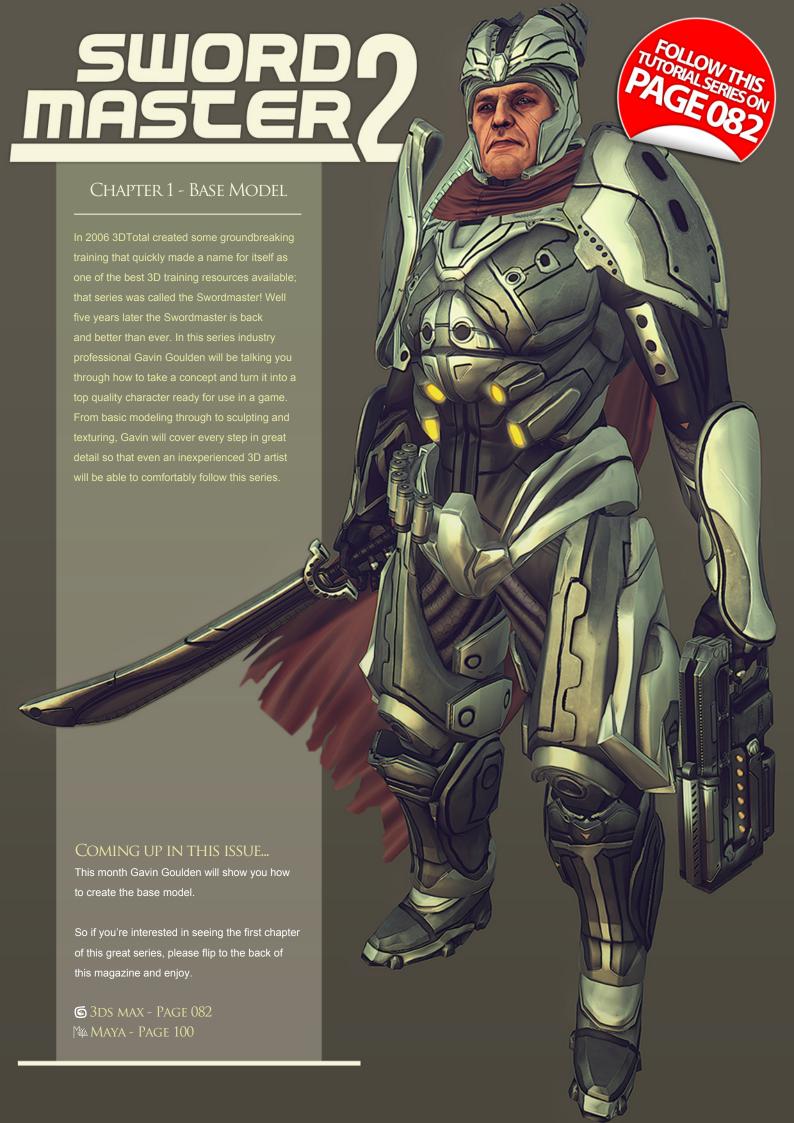


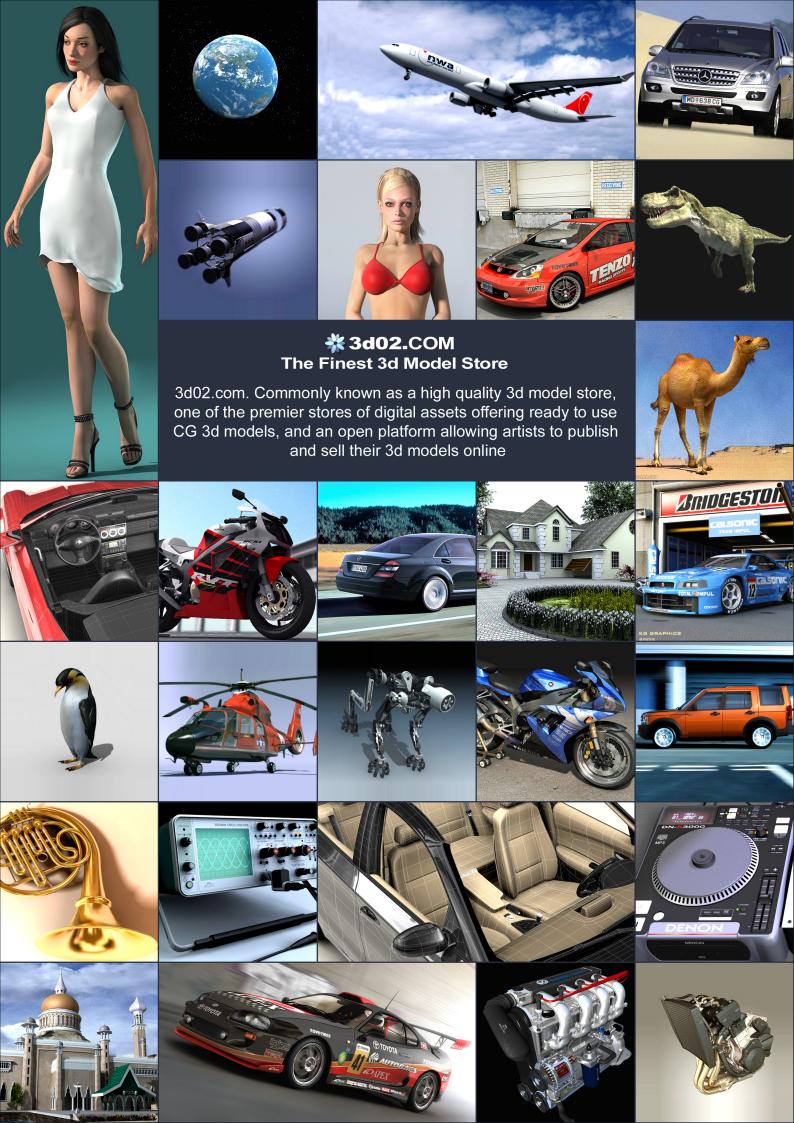














Artist:

**Andrew Jones** 

website: www.shareoneplanet.org



### SHARE ONE PLANET

### **3dcreative**

### Share One Planet Competition Winners Announced

Nearly a year after being launched, the "Share One Planet" Wild Animals CG Art Elites Invitational competition has finally concluded. This competition was the first creative event in the global CG art field with a theme that focused on the protection of wild and endangered animals. 233 valid entries were submitted by a variety of talented artists from 38 countries and regions, all who interpreted the brief in their

own unique way and brought their love and concern about wildlife to life through a variety of techniques, styles and artistic creativity.

The judges for this competition were Mark Snowswell from CGSociety, an internationally known CG art community, Arnie and Cathy Fenner, the art directors of famous fantasy artistic yearbook *Spectrum*, and many well known artists including Terryl Whitlatch and James Gurney. Their involvement ensured a high standard of judging across the board.

For the judging, the entries were divided into seven categories, which were portrait, herd, mother's love, prey and predator, harmony and swan lake. The winners and a selected nominated image from each category are displayed over the following pages, along with comments from the judges explaining their thoughts and reflections on the individual pieces.

### Winner of Digital Sculpture

Victor Hugo Aguilar Reyes (Mexico)
Entry (Right): Welcome Home

#### Comments:

Terryl Whitlatch: Good anatomical accuracy, and the little turtles are a good addition. Nice sense of environment and motion.

Mark Snoswell: This is a beautiful sculpture of mother and baby sea turtles. The composition is excellent and the detailing is truly superb.

Ding Yuguang: Elaborate structural design. The little turtles are the highlight.









## SELECTED NOMINATED WORK

Wang Dongfei (China)
Entry (Left): Watcher

#### Comments:

James Gurney: The artist has chosen a dramatic moment, with strong silhouettes from all angles.



### SHARE ONE PLANET



### Winner of Portrait

Antonio Javier Caparo (Cuba)
Entry (Right): Loris Planet

#### Comments:

Mark Snoswell: This image may well become an icon of our times. Caught in the headlights of our rampant consumption this shy little creature clings onto the planet – or at least this vanishing habitat he has left. The composition is exquisite. The lighting is excellent and the message compelling.

Duan Jia: The image is vivid and significant.

Ding Yuguang: Delicate style. Beautiful composition, especially the melancholic expression in its eyes which is the highlight of this painting.



### SELECTED NOMINATED WORK

Tiago da Silva (Portugal)

Entry (Left): At Home

### Comments:

Arnie and Cathy Fenner: A beautiful cat shown in it's environment.

Xi Zhinong: The look of the snow leopard makes the viewer feel as if they are actually there, and shows the beauty of the large feline.

**Yu Yanfei:** This art shows the snow leopard is walking easily in the bad weather with ice and snow.





#### WINNER OF HERD

Cheng Rui (China)
Entry (Right): Direction

#### Comment:

Terryl Whitlatch: Eye-catching and straightforward exploration of animal profile portraiture. The animals speak for themselves rather than relying upon a distracting allegorical fairytale human character. You may wish to discourage this sort of thing, because the viewer is not so much focused upon the intended conservation message, but may instead misinterpret it as being an illustration for a fantasy story.





### SELECTED NOMINATED WORK

Zhu Tao (China)

Entry (Left): Beauty of Plum Tree

#### Comments:

Terryl Whitlatch: Fresh, yet classic, oriental brush technique. Good composition, good grouping of cranes, nice gestures and nothing contrived.

Ding Yuguang: The red-crowned cranes are portrayed vividly with tradditional Chinese painting style.

Mark Snoswell: This is an exquisite painting in the traditional Chinese style. The cranes are beautifully painted with the splashes of red and blue bringing them to life. Excellent execution and style, and a great feeling of unity between the cranes.





#### SHARE ONE PLANET



#### WINNER OF HARMONY

Liam Peters (Australia)

Entry (Above): Shared Between Us

#### Comments:

Mark Snoswell: The form and motion between human and birds are perfectly captured here. The shapes and actions are in complete harmony – sharing the same life-giving water. The technique and lighting are subtly beautiful and a perfect complement for the subject.

Xi Zhinong: A human sharing the same water with bird, without disturbing each other. This matches the theme of harmony. Very exquisite depiction.

#### SELECTED NOMINATED WORK

Nelsy Adriana Pérez Jiménez (Mexico)

Entry (Right): Don't send them to heaven, be their angel!

#### Comment:

Ding Yuguang: Good depiction of a beautiful maiden gently blowing the ring of light off the tiger's head. It subtly represents the wonderful dream of protecting the wild tigers. Warm and nice feeling.





#### SHARE ONE PLANET

# **3dcreative**

#### Winner of Mother's Love

Tiago da Silva (Portugal)
Entry (Right): Blissful Place

#### Comments:

Yu Yafei: A brook crosses the dense bamboo forest. A mother panda and cub are playing near the stream. The mother panda is charmingly naive, gazing around with the sharp eyes warily. The cub is catching a frog in the water. An aesthetic picture.

James Gurney: The painting makes me feel that I'm really in a bamboo forest with the pandas. It has a beautiful feeling of light and quietness.





#### SELECTED NOMINATED WORK

Mateja Petkovic (Serbia)

Entry (Left): Fragile

#### Comments:

James Gurney: Even though this is an accurate portrait of the monkeys, it conveys universal feelings of parental love.

Mark Snoswell: This is a beautifully painting portrait of a mother monkey and her baby sleeping in her lap. The expression of the mother and baby are exquisite – the mother stoically patient and the baby blissfully asleep and safe. Beautiful composition.

Xi Zhinong: Exquisite depiction of the mother monkey and her baby. It shows the affection between them well.

Yu Yanfei: The baby is sleeping in the mother's arms. The mother's eyes are bright. Subtle depiction of the fur. This shows the skill of the artist.





#### SHARE ONE PLANET

#### WINNER OF PREY AND PREDATOR

#### Samantha Hogg (UK)

Entry (Right): The Moment

#### Comments:

Terryl Whitlatch: Snow leopard and ibex – nice graphic illustration and well designed composition showing the moments between the pounce and the prey's sudden awareness of danger. Good storytelling.

Mark Snoswell: This is a wonderful image that conveys the mutual respect of hunter and prey. You get a real feeling that the snow leopard and ibex are engaged in a strategic assessment of the battle ahead. Excellent composition and technique.

Arnie and Cathy Fenner: Very convincing cat and interesting layout.

Ding Yuguang: There is no superfluous painting with an alpine ibex in the foreground and a snow leopard in the background. But it shows the atmosphere of tension and the feeling of imminent battle vividly and incisively.

# SELECTED NOMINATED WORK

Wang Dongfei (China)

Entry (Below): A hunting Siberian tiger

#### Comment:

James Gurney: This painting has an excellent feeling of power and strength. It has a good center of interest too.









## WINNER OF SWAN LAKE

Jennifer Miller (USA)

Entry (Right): Veneration to the Sun

#### Comments:

Terryl Whitlatch: Nicely balanced and lit grouping of swans.

Arnie and Cathy Fenner: Beautiful depiction of swans at dawn. Makes the viewer feel as if they are actually there.





# SELECTED NOMINATED WORK

Su Haitao (China) Entry (Left): I Can Fly

#### Comments:

Ding Yuguang: Good unity of subject and style. It interprets the beauty of the little swans well.

James Gurney: This has a warm storybook feeling. The baby wins our sympathy because he looks like he is just learning to walk.

# FUTURISTIC UFFICES



Futuristic vehicles are a common subject matter in the CG world. However, creating a complicated model that then needs to be textured and lit can be a time-consuming process, which is only necessary if the model is to be animated later in the process. If you are creating a still there is an easier way that will save you a lot of time and still produce equally impressive results. In this series Dhilip Somesh will be showing us how we can create a simple 3D model which can then be textured, painted and lit in Photoshop to create amazing futuristic vehicle illustrations.



#### CHAPTER 02 - VECTROMER

Software used: 3ds Max and Photoshop

The task for this tutorial was to create a futuristic space craft. I decided that I wanted to create a speeder or some sort of racing craft that could be used in races that would happen in the distant future. The name that I came up with for this craft is The Vectomer, which is derived from the Latin word "vector", which means "carrier". Rather than making the vehicle a sponsor-covered racing vehicle, I decided that I would give it a military feel, as if different army groups were racing each other.

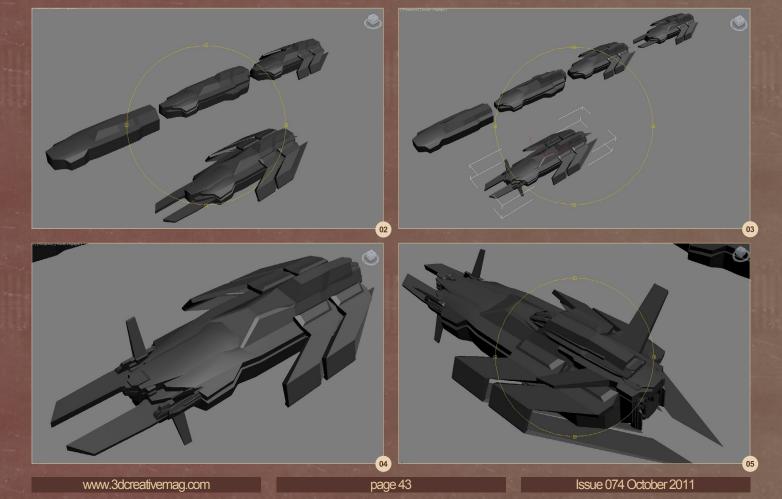
I spent about two days (about 18 hours) working on this image from start to finish. I started by creating a rough concept using the box primitive tool in 3ds Max and by laying out basic shapes to show the shape of a cockpit. The cockpit I created looked a little like the seating area in an F1 car. I did all of the design and concept work in 3ds Max as I find it helpful to be able to

see around the whole shape rather than in 2D format. All I needed was the shape as later it would be taken into Photoshop (Fig.01).

I then started to add detail to the cockpit to make it look more like a spacecraft. Things like fins, wings and the nose of the ship were added in this stage (Fig.02 – 04). I made copies of the

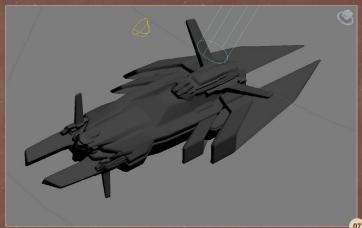
shapes and kept them near my main model so I could update them or re-use them whenever I liked.

I then rotated around the image looking at places where further details could be added to make the vehicle more unique and interesting (Fig.05 – 08).



# Chapter 02 | Vectromer FUTURISTIC VEHICLES





I then simple chose the angle I would like the ship to be viewed from and set the lighting.

Once this was done I could take the image into Photoshop (Fig.09).

From this point onwards everything was done in Photoshop. The first thing I did was to copy the shape of the ship and use it to create the shadow, which is now beneath it. I also started to sketch on some of the ship's details and show where some panels were going to be (Fig.10).

I then used the Pen tool in Photoshop to outline the whole ship and tidy up the details that I

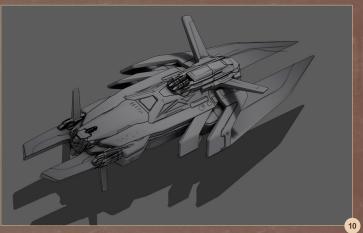


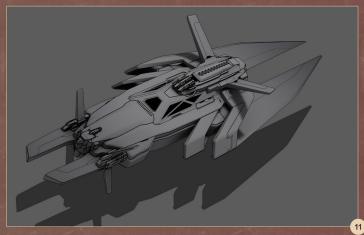


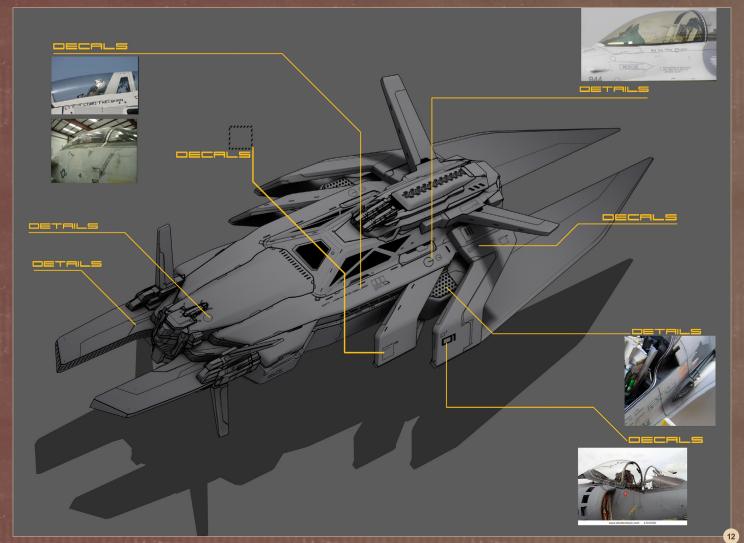
had sketched on to it. To draw straight lines in Photoshop hold down the Shift button (Fig.11).

I then added some decals to the ship. This helped to make the ship look more interesting and believable to the viewer, as in reality ships have these details too (Fig.12).

I created a new layer, which I put below the layer containing the line work and the decals. This was so I could make color adjustments to these independently if I needed to. I then used the Wand tool to select the shape of the ship and started to paint in some dirt using textured brushes. I also used a Smoke brush. Brushes







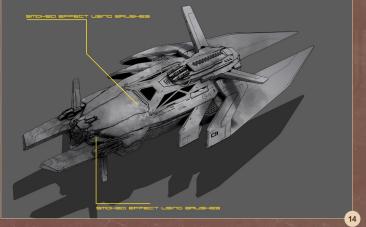
like these can be downloaded for free from the internet. Adjust some of the settings like Scatter and Angle Jitter to get more random results. You can also use the Eraser to remove areas to add to the randomness of this layer (Fig.13 – 14).

On a new layer I started to add some color variations to the ship. This added to its military

appearance. Toggle through the layer types and opacities until you find one that you are happy with and that still shows the texture and detail that was created earlier (Fig.15).

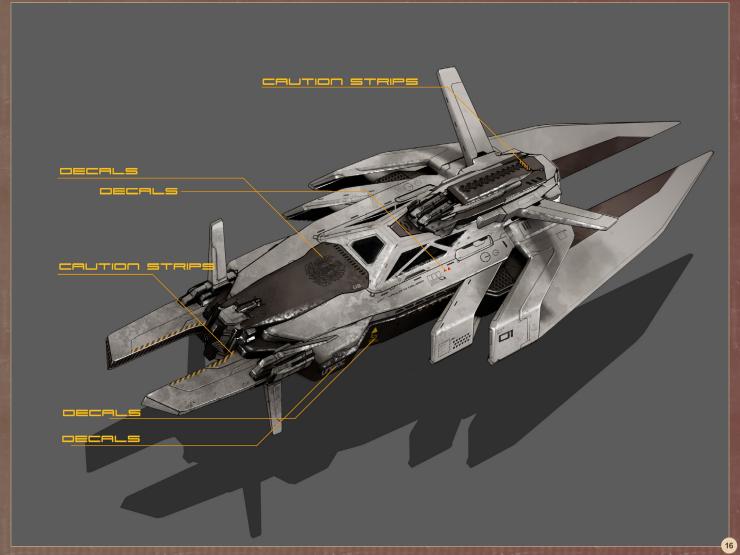
As well as adding further color variations I added some more decals. This has a similar effect to the decals added earlier in that the

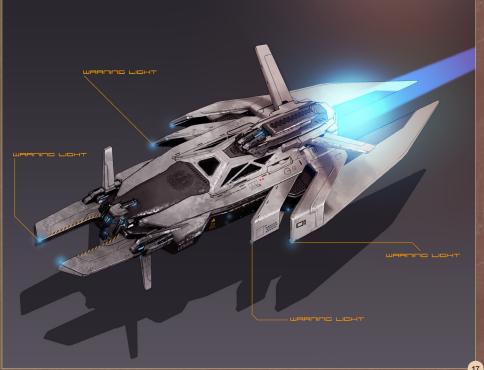






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ship is now more interesting to look at and is more believable. For example, yellow and black stripes were added and everyone knows that this means caution. This adds to the believability of the image (**Fig.16**).

Using a Linear Dodge layer I began to add some lights and effects to the ship. I added lights all over the ship as well and created a flare effect to make it appear as if the ship was being propelled forward (**Fig.17**).



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# FUTURISTIC VEHICLES Chapter 02 | Vectromer

# **3dcreative**

I started to then make color corrections all over the image and add more space-like colors to the background, purely for presentation purposes as I was not planning to add a space scene to the background. I added Motion blur to make it look as if the ship was travelling at speed (Fig.18).

I used a Sharpen filter to tighten up the image a little and then it was complete. I like to present it with some shots from different angles in case an art director or employer wants to get a better idea of what the overall shape of the ship is like (Fig.19).

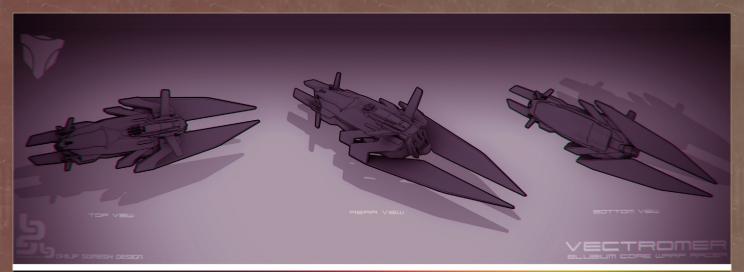
### DHILIP SOMESH

For more from this artist visit:

http://nullworld-3033ad.blogspot.com/

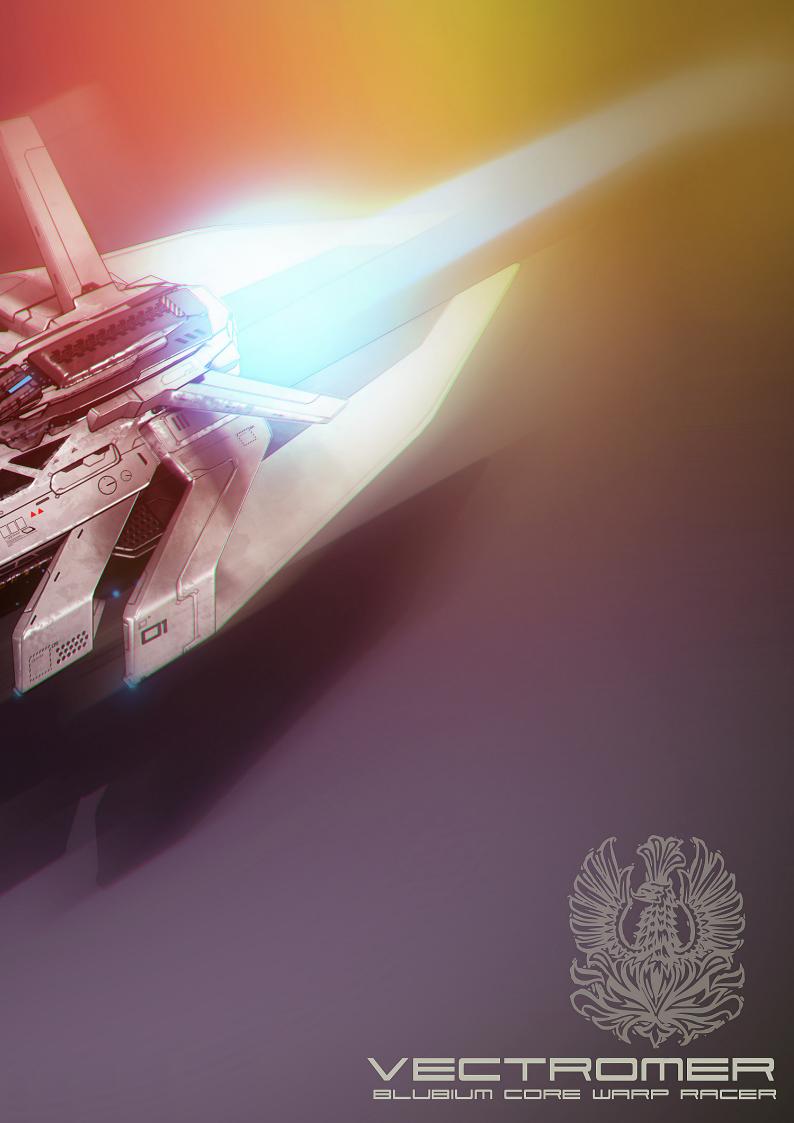
Or contact them at:

dhilipsomesh@gmail.com

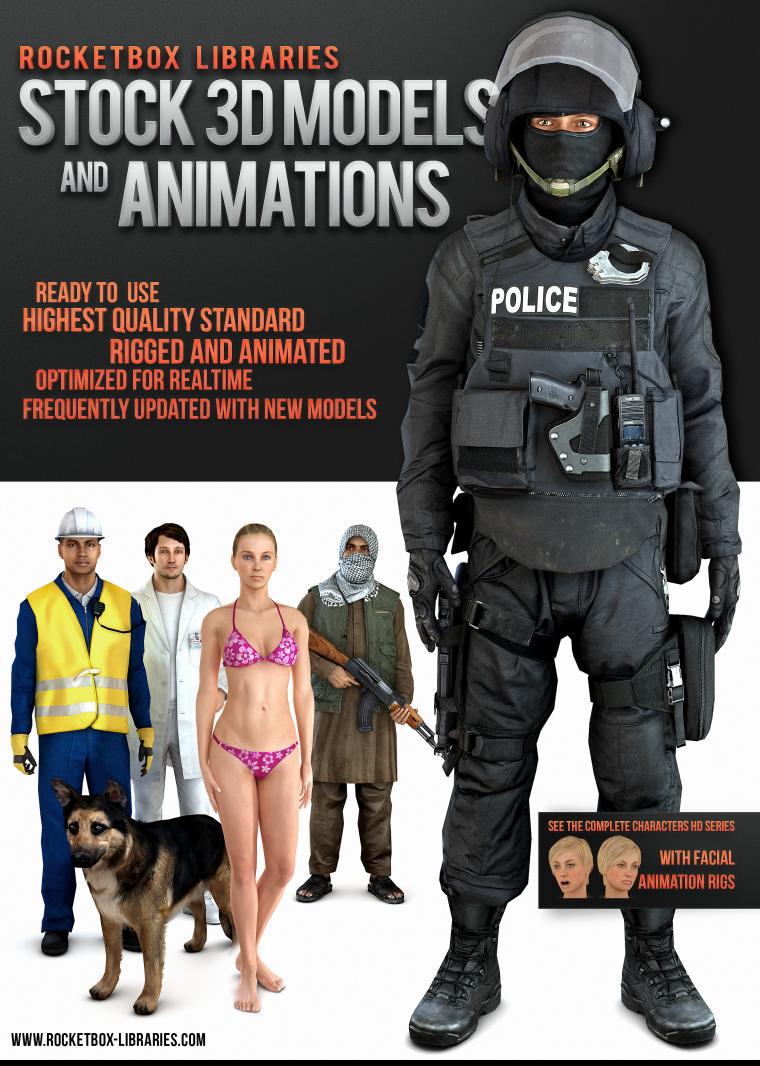














JULY ISSUE 071 Chapter 01 | Mosquito AUGUST ISSUE 072 Chapter 02 | Emu SEPTEMBER ISSUE 073 Chapter 03 | Armadillo

THIS ISSUE Chapter 04 | Squid NEXT ISSUE Chapter 05 | Scorpion DECEMBER ISSUE 076 Chapter 06 | Sloth

#### CHAPTER 04: SQUID

Software used: 3ds Max and ZBrush

Hello my name is Luis Arizaga. I'm the art director at Digital Rebel Animation Studios in Barcelona. First of all I would like to thank the 3DTotal team for inviting me to create this tutorial. In this article I will show you how we develop a 3D cartoon animal. It's the same way we do all our characters for our animated TV series *Holymonks*.

### Introduction – Original Idea and Character Concept

First of all we do research about the character that has to be developed. I like to see examples of other artists and real animal references from the internet. With all the collected information I start to sketch some ideas. I choose the best concept and I design in detail the main shape of the character. It's important to keep in mind the final aim and not lose yourself in the details.





You should also decide the color scheme here. With a good concept design we have a solid base for all the rest of our work. As you can see I developed a squid (Fig.01).

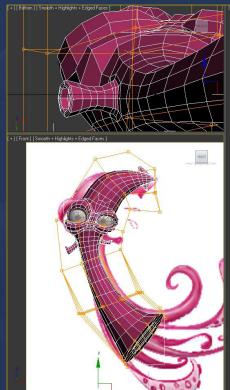
#### MODELING

It's good to keep the concept in front of you all the time. I prepared a plane with the concept image in the software viewport, but you can use a printed copy or another monitor.

I always start with polygon modeling. It's easy to export your work to any software later. I use several techniques to model with polygons.

One of them is the box modeling technique. I start with a cube and extrude its faces. I then move/connect the vertex and cut the edges until it gives me the basic shape with the right proportions. The Symmetry, Soft Selection, Free Form Deformation and X-ray Vision tools are all very useful when working with this method (Fig.02 – 03).

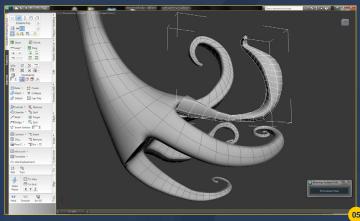
Another good tool that helps the modeling process in Max is the Bezier Splines. All the 3D packages have this tool or lines that work more

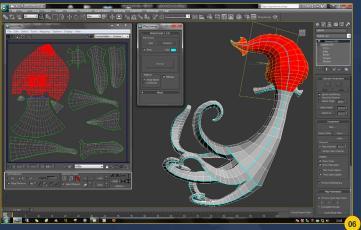


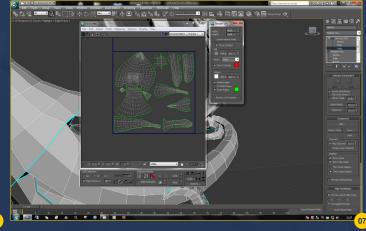


# Chapter 04 | Squid CARTOON ANIMALS









or less the same way. I use the splines a lot as path guides to control the extruded polygons (Fig.04 – 05).

In the case of this image I didn't use any additional sculpting software like ZBrush or Mudbox, so when I finished the main structure

and the modeled details, I unwrapped the UVs. I used the XRayUnwrap utility to unfold the UVs. It's a small, but very powerful, plugin (**Fig.06**).

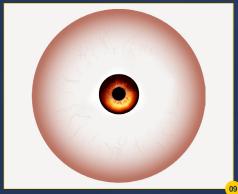
With the model unwrapped I then rendered the UV template to use it in a painting program (Fig.07).

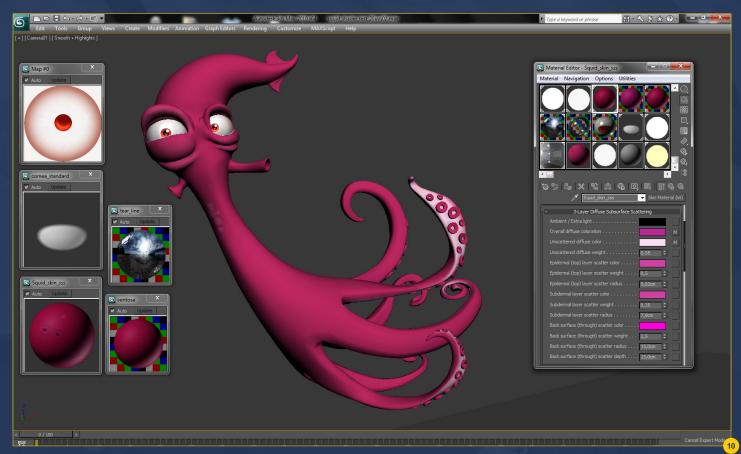
#### **TEXTURING**

I also created an ambient occlusion map.

They give you a simple layer you can use as a reference to start painting. I used 3D paint programs like Bodypaint or Mari in combination with Photoshop (Fig.08 – 09).





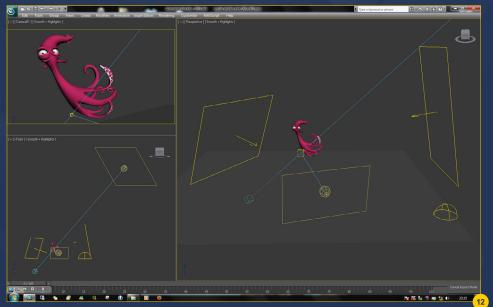


The shaders are combined with the textures to achieve skin and other materials. The eye is made of three pieces. One is the iris with an Arch and Design material. The second is the cornea. The cornea has a white point on it to fake the reflection on the iris. The third element is a tear line with a glass material that is very transparent. The tear line gives extra detail to the eye.

When using the mental ray skin shader it is very important to have the right scale for your scene. You can see the settings I chose to use in Fig.10 and also the skin shader without a map in Fig.11.

#### RENDER AND LIGHT SETUP

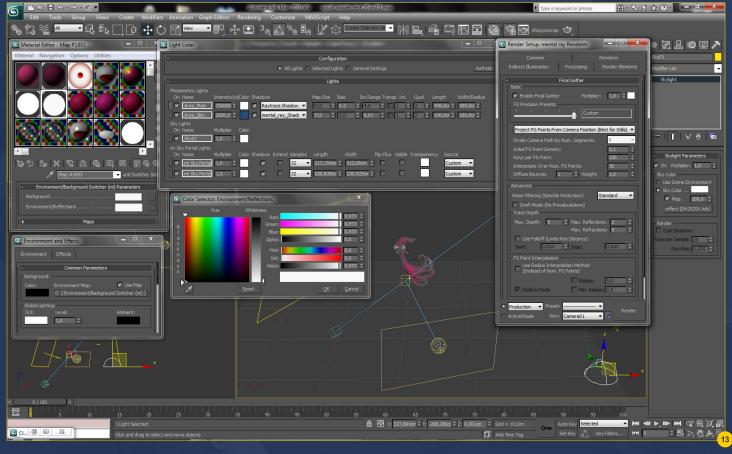
The illumination is based on HDRI lighting in mental ray. There is a HDRI map in the sky light.

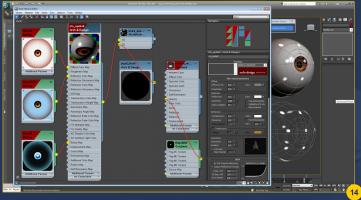


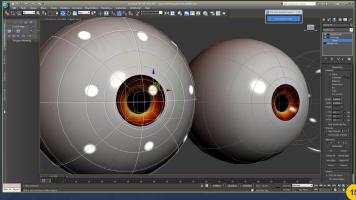


The environment reflections are controlled by an Environment/Background Switcher (mi).

There are two area lights: one as the key light with ray-traced shadows and 64 samples, the other as a fill light for the squid with a mental ray shadow map and dark blue filter color. There are two sky portals to create the rim light with 32 samples for the shadows (**Fig.12**). You will see that with high values in the samples you









can get good, smooth shadows. In the render parameters I only set Final Gather to active. You can see that the parameters are very low (Fig.13).

The eyeballs are very important! They are often the place you look first. You have to combine good geometry orientation with a believable shader. You need something more than a good texture to give life to your eyes. Try to make the eyes look good, but don't try to achieve realism in your textures. Real eyes aren't what we are looking for. Realistic eyes are not cartoony and can make your cartoon look creepy. Choose an

almost white clear texture for the eyeball and try to be subtle with the red color you use for the veins. To achieve this use a clean reflective material as this will help to smooth the texture colors (Fig.14).

You need some light reflection in the iris to fake where the main light goes through the iris. The same texture and reflective material used for the eyeball should work fine for this. I did some small tweaks to achieve the incandescence or iris glow. You can use the same color map for the reflection color map and manipulate the output RGB channels (**Fig.15 – 15a**).

#### Humanize Your Character

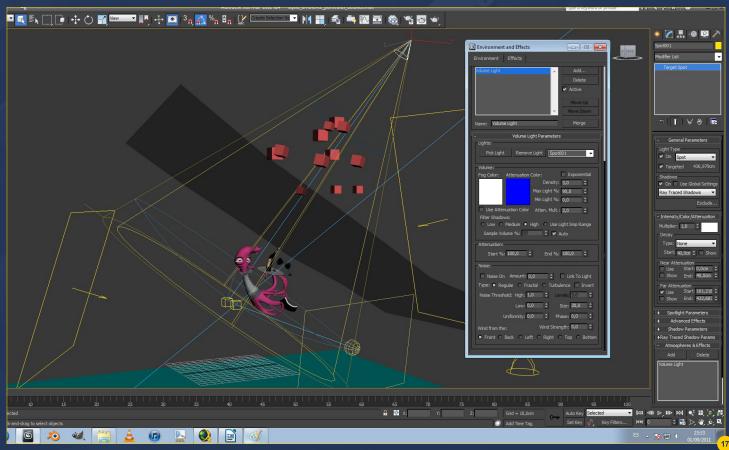
To humanize a cartoon you can show them doing human-like things. I thought that a squid working as professional waiter could be perfect for this character, so I added clothes and special objects to identify his profession. Remember to deform or exaggerate features to add to the cartoony style (**Fig.16**).

# ADDING AN AQUATIC ENVIRONMENT

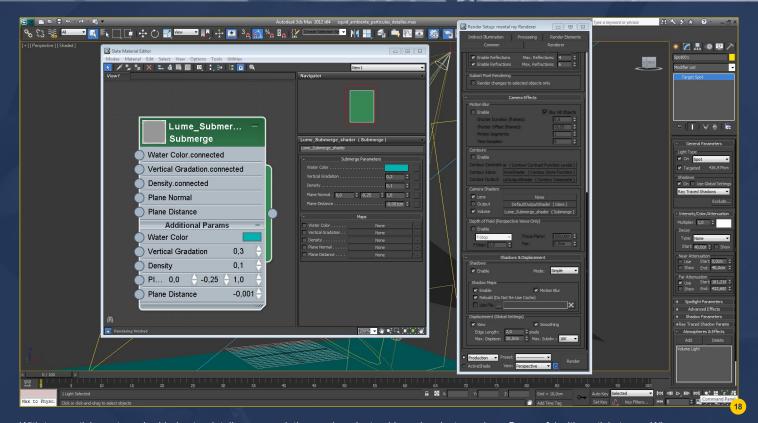
As this is an underwater animal it makes sense to put him in his environment. To achieve this I used an extra light with Volume effect on. Light goes through the water and is visible in beams. This can be done using some geometry (cubes) that block the light. For the water surface I used a plane with a mental ray A&D shader (Fig.17).

I used the Lume Submerge shader in the render parameters to give the sea depth. Put this in the Renderer > Camera Shaders > Volume slot (Fig.18).





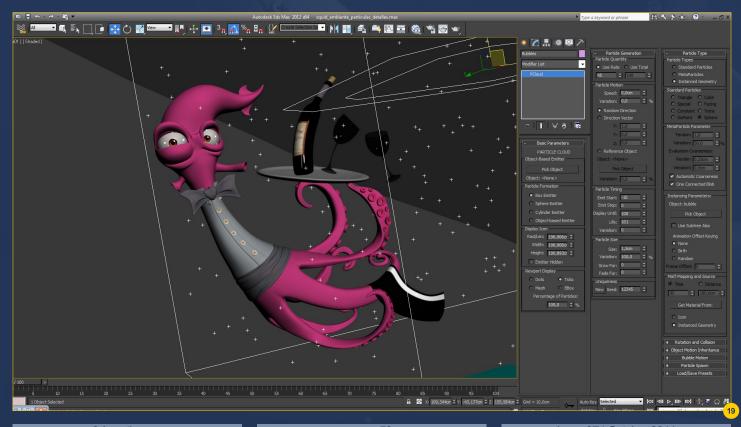
# Chapter 04 | Squid CARTOON ANIMALS

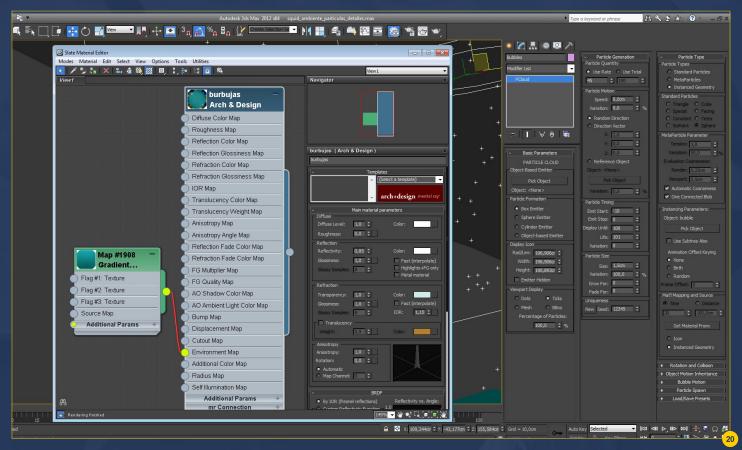


With two particle systems I added extra details to the image. One system was for the small plankton particles illuminated by the sun light and the other was for the bubbles. In the bubbles system I did not use the sphere particle by default because it lacked detail in high

resolution renders. Instead I used an instanced geometry sphere with a turbosmooth modifier. I added an extra light to illuminate the bubbles. I used a shader for bubbles with an IOR set very low. I also used a gradient map in the environment that consisted of the water's colors.

Be careful with particle types. When you use Standard Particles the aspect depends on the render output size and the anti-alias. In small render tests with low anti-alias the render gave me big white dots (**Fig.19 – 20**).





The render was a 3500px wide poster with all the effects and shaders. But post-production was very simple since I had almost achieved what I wanted to already. The final image has

been color corrected and blurred slightly to fake depth of field. I also added subtle chromatic aberration and a little vignetting. I hope you enjoyed the tutorial. If you've any question then don't hesitate to contact me. I love talking about 3D cartoons! See you soon (Fig.21).

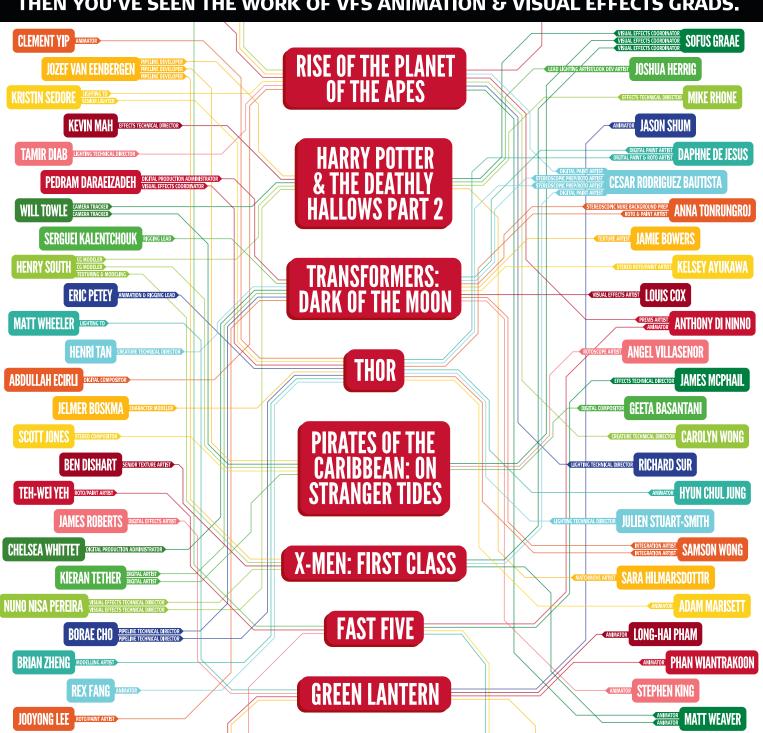


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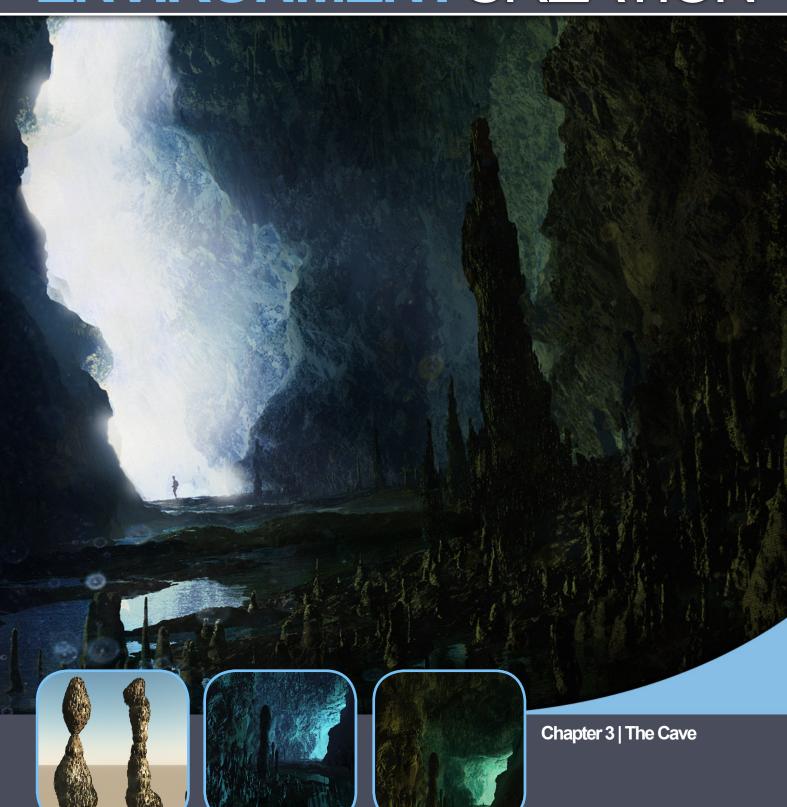
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# VUE ENVIRONMENT CREATION



Vue is a fantastic piece of software that is being used more and more in the movie industry to create beautiful, realistic environments. It can meet the needs of almost any artist in any situation and, as with most CG packages, the

only limitation is your imagination. In this series Alex Popescu will be exploring how to get the best out of this versatile software, talking us through all the options on offer and looking at the ways in which Vue can be used to create

stunning environments and back-drops. If you are interested in Vue as a piece of software, or if you are thinking of having a go at creating CG environments, then this tutorial is the one for you!

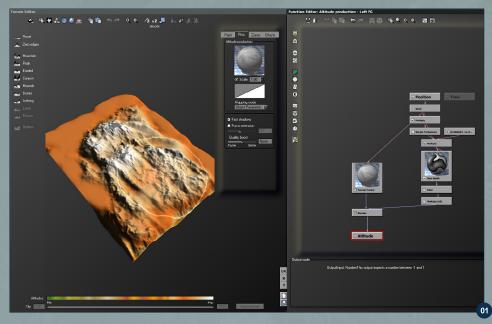
### CHAPTER 3 - THE CAVE

Software used: Vue

#### INTRODUCTION

When I first started this series and was thinking for subjects for each of the tutorials, I tried to think of challenging environments and unusual setups that would push our skills. I think that is what this month's tutorial is going to do. The subject is a very complex one: a cave.

There are so many things you need to take care with when dealing with such an unusual type of 3D environment, from complex lighting to complex terrain and materials. That is why I will be concentrating more on the techniques used to approach this challenge. Some of the most interesting points will be the use of Hyperterrains, Hyperblobs and unusual ecosystems. So let's get to work.



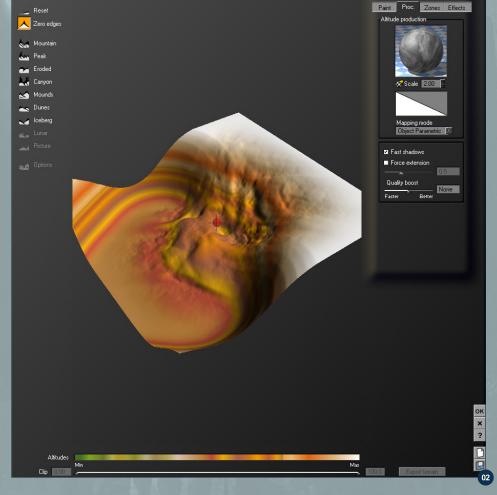
### THE TERRAIN

10 10 10 10

As always the project starts by looking for reference images. There is a lot of cave photography on the web and the subject is very complex. I decided to go for an open cave because I felt it was a bit more interesting to combine the usual light in an underground cave with an over-exposed gateway to the outside world.

The first thing was to start building the cave walls. I used the same approach as in my previous tutorial – creating the walls as separate terrain object rather than having one big single item for everything. This way I was able to keep the control I was going to need. In the terrain editor I used a technique that should already be familiar to you guys: combining two fractals, one for the large shapes and another for the finer details (Fig.01).

Then I adjusted the size to fit the scale of the scene I was thinking about. I used the same technique to create the wall on the left and right. Remember to add a back wall behind your camera, otherwise you will get unwanted light coming from behind (unless you are actually looking for that). For the ceiling I used an inverted terrain, with a sculpted entrance, rotated 180 degrees (**Fig.02**).



#### CREATING THE LAYOUT

I did spend a bit of time thinking about the format of the image. I started exploring the

# Chapter 3: The Cave VUE ENVIRONMENT CREATION

landscape for options. Quickly I came to the conclusion that a vertical format would create a more interesting viewpoint. I wanted to show some stalactites and stalagmites, so it would need to show both the floor and ceiling. I also wanted to see some nice walls that demonstrated some depth. I concluded that a vertical format would suit this better. For the camera I used a 24mm lens.

As I wanted the cave to be open at one end I retained an opening at the back of the cave. I also decided to have a bit of water at the bottom of my cave to get some nice reflections. Here is my viewport with my cave walls in place (Fig.03).

### SETTING UP LIGHTING AND ATMOSPHERE

This time the lighting setup was very experimental. I wasn't sure what I was looking for because a standard atmosphere setup was not going to work. So I used the sun and the Vue atmosphere setting to get the dark mood and then decided to use extra lights for my environment.

For an environment like this one, the lighting process should be a flexible one. You should create a basic setup and then start building



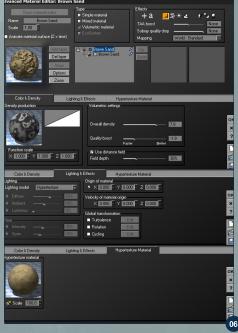


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your scene further using the simple lighting.
Then once you're happy, refine it by adding some extra lights. Here is my atmosphere setup (Fig.04).

As I said I just used something simple to light the scene at this point. I just added an extra light outside my cave; a very powerful one that would create some highlights and shadows all over the terrain. I chose the position of the light by doing lots of fast renders until I was happy with the light and shadow shapes on the walls.

Use a simple material for the terrain, because at this point you just want to get a feel of the place – you don't want to wait too much for your



renders. I went with the brown rock from the default rock presets. Here are two renders, one just with the sun light and another one with the added outside light (**Fig.05**).

# **HYPERTEXTURES**

At this point we are getting to one of the main topics of this tutorial. We are happy enough with our lighting setup to start worrying about the rocks themselves. Of course there are many ways of building the cave walls, but Vue allows for a very interesting and effective method: applying a solid volumetric texture to the terrain.

The subject is very big and interesting, so I will just explain what I used for this scene, although I do encourage you to read the section in the Vue manual that covers Hypertextures and experiment with them. There is also a lot of information on this online to help you get to grips with them.

The first thing you need to do is to go to the Material Editor and activate the Volumetric material option. Then choose Hypertexture material in the dropdown menu. For the density distribution I chose one of the preset terrain fractals, a bumpy rounded one. Note that the Use Distance field option is activated. For details about all the volumetric settings please check the Vue manual. In the Hypertexture tab choose the material you would like to use (Fig.06).



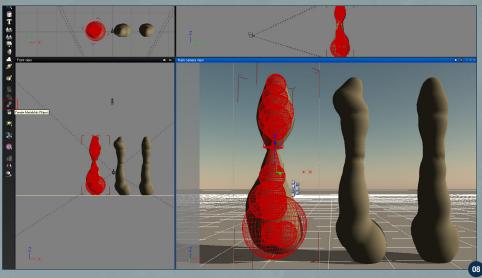
Here are two renders of my left wall, with and without the Hypertexture material. The amount of detail is impressive and the render time is going to stay low. This method is actually a lot faster than a displacement approach. Keep experimenting with different density productions; the results will be very rewarding (Fig.07).

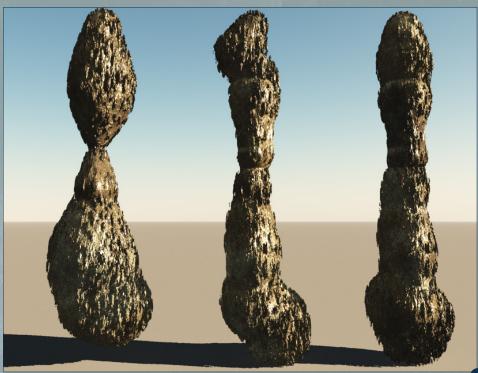
#### METABLOBS AND Hyperblobs

So our cave walls are looking interesting with our cool hypertexture material. But what about some interesting features for our cave? We could start with some stalagmites. Again there are a few ways to approach this, but I am going to talk about one that allows for a lot of creative freedom, and gives fast and powerful results.

Metablobs are created by combining primitive objects as if they were gooey blobs. So start







by building the overall shape of your stalagmite using primitives: spheres, cones, cylinders, whatever you want. Then select them and activate the Metablob option. Use the sliders to find the exact shape you were looking for. If needed, go back and adjust the position of your primitives until you get the desired result (Fig.08).

Now that we have the overall shape of our stalagmite, how about using the same process we used for the walls to get all the detail? Apply a Hypertexture material to your stalagmite and be amazed by the really quick result. You can

then easily save your Metablobs as a .vob file and import them into your scene (Fig.09).

Hyperblobs in principle are Metablobs with a Hypertexture applied. Starting from Vue 9 you have the option to do this when you go for the Metablob option, by right clicking on it. The result is the same. After adding a few stalagmites all around, my image looked like this (Fig.10).

### ADDING THE ECOSYSTEM

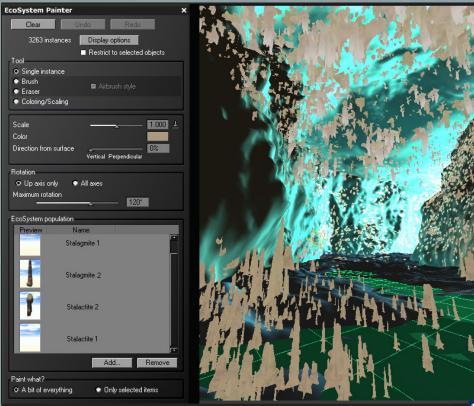
As we know, a cave is not a barren place. There are many living organisms all around. However



this time the ecosystem engine will be used in a unique manner. I like the stalagmites I created, but it would be a bit of an effort to create all the stalagmites and stalactites we find in a cave one by one. So why not distribute them using an ecosystem approach? It gets even better. You can use the plant editor to create the stalagmites and stalactites. You should always try to find interesting solutions to the problems you encounter when dealing with a complex environment like this one. Here is what I did.

First I created a default tree and went into editing mode for that object. By altering the settings you can make it look very much like a stalagmite. Then you change the texture for the bark to a rock material with displacement applied. Don't forget to do that because you will not be able to change it later (Fig.11).





Once I was happy with the look of my new stalagmite plant it was time to save it so I could use it as a plant species in the ecosystem.

This time I used a global ecosystem, because I wanted to paint stalagmites and stalactites all around, not on a single object. In the ecosystem I loaded my stalagmite species and started painting. Be careful with the scale as you want to keep a natural variation in your environment. The result is quite nice isn't it? (Fig.12).

#### BALANCING THE IMAGE

As I felt that my main elements were in place, this is the point where I started to get everything the way I wanted it to be for the final image.

So I changed the stalagmites that didn't feel quite right, added extra lights, and tweaked the material and even the camera position! It's a 3D environment so you can do this kind of thing.

Once you are happy with everything, go for the render.

# RENDERING THE IMAGE

After doing the final tweaks to your scene and once you're happy with your test renders, go for the final one. Remember to activate the

Multi-Pass Rendered option to get all the utility passes you will need in the post-processing. The z-depth pass is my favorite, but you will need the direct light pass from your extra lights, the object masks and the specular mask etc. Here is what I got. It was not massively photoreal, but I had most of the elements I needed to create what I wanted (Fig.13).

# THE PHOTOSHOP PROCESSING

The image might feel very strange at this point. That is because I kept some important steps in mind while I was working on it. Because I had all my extra passes I could do some big changes without wasting time rendering. As always, if I did run into trouble and felt like I needed to make a change to the 3D scene and a new render I wouldn't hesitate to do so, but it's good to stop the 3D process at some point and evaluate your options in terms of post-processing. You might have a nice surprise.

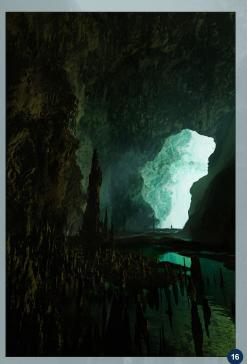
# THE EXTRA LIGHT

When looking at my render I felt that my stalactites were still a bit too dull, even though

I added some extra light on them. So by using the direct diffuse light pass I enhanced their highlights, and with a mask chose only the areas I wanted this to effect. Because I liked the look of it I actually considered pushing this forward and trying to sell the idea of a second light source behind the camera. This way, I would have been able to create an environment appearing to contain two light setups: an interior one in the foreground and an exterior one for the background (**Fig.14**).

## THE COLOR CORRECTION

It's a lot easier for me to work with shades of blue in Vue because the physical atmosphere is like that. But now I tried to change the hue of my render to something I felt would work better because this is something you can do really easily in post-processing. I didn't really worry about this while I was creating my Vue scene. Of course when changing colors I also used the z-depth pass to add some colored haze in the distance. The z-depth was also used for the exposure corrections, which helped me to get the feel of an overexposed exterior in the back of the cave. I also used the water surface mask to show the color I added to the background. Here you can see the color corrected image (Fig.15).



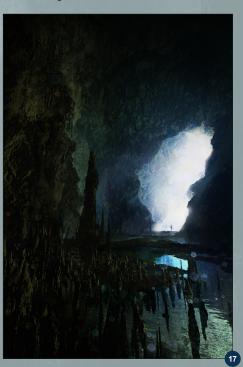


### GOING BACK TO VUE

As I said, there is no shame in going back to Vue to change a few things. I wasn't very happy with the way my stalagmites were shaped or with the shape of the entrance to the cave. After doing a new render, here is what I had (Fig.16).

# FINISHING TOUCHES

In the end I like to spend a bit of time trying to get a more photo-real look by adding some effects like glow, chromatic aberration or a bit of





defocused dirt on the camera. To help the scale I also added a human figure in the background, where I used to have a stalagmite. Color wise, after studying some more references, I decided to change the pallet a bit (Fig.17).

# A BIG CHANGE AT THE END

After not touching the image for a couple of days I looked at it again and something was still bothering me. I felt I didn't capture that excitement that would come with a place like this one. So I sketched the top of my image and came up with a new idea for the shape of the entrance. I made the modifications and voila! I also decided to flip the image so the cave was on the left of the scene (**Fig.18**).

Thank you very much for going through this month's article and I hope you found it an interesting read. For any questions on the tutorial, or suggestions for the next one, drop me an email at alex@alexpopescu.net.

# **ALEX POPESCU**

For more from this artist visit: http://www.alexpopescu.net/
Or contact him at: alex@alexpopescu.net



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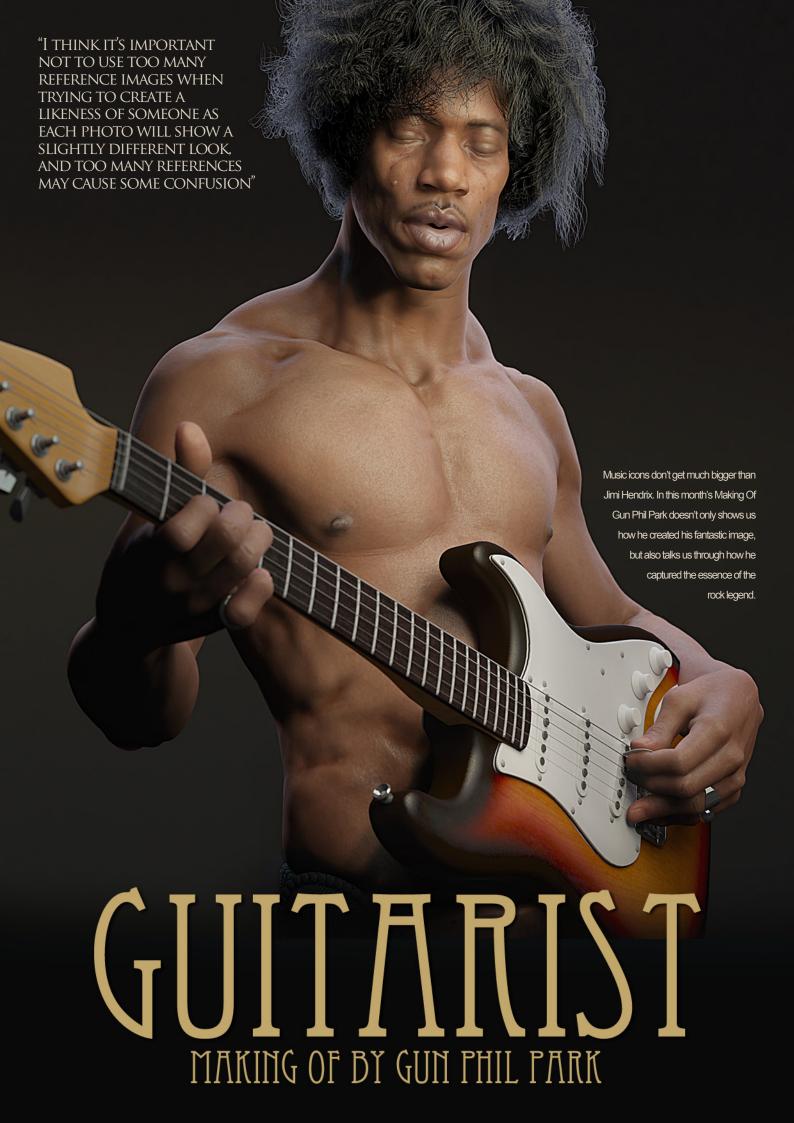
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# GUITARIST Making Of

#### **GUITARIST**

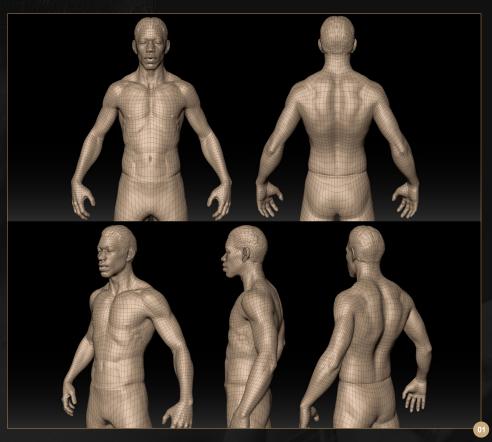
Software used: ZBrush and Maya

#### INTRODUCTION

Over the last year I've had the chance to create several creatures and hard surface models, but all my human characters were left partially done. I felt that I needed to revisit my human sculpts and try to work on an organized human character, which was when I started my image *Guitarist*. I also wanted to improve my sculpting skill and continue to study anatomy. My artistic goal for this project was to create a resemblance of Jimi Hendrix and capture his expressions.

#### **TOPOLOGY**

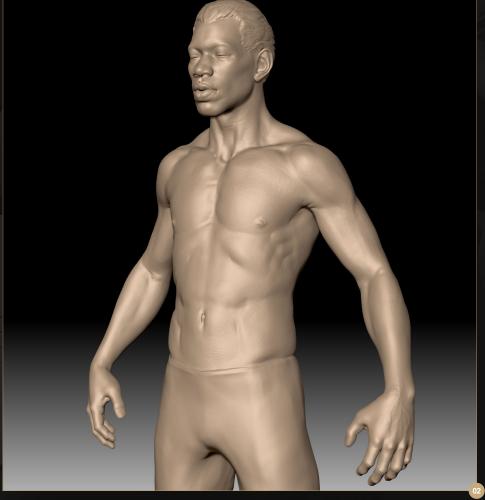
I prefer to keep the topology simple with clean edge loops and nice edge flow as it means that the model will look smooth and natural at the lowest subdivision level. It also means that it will be good for rigging. (Fig.01).



#### MODELING

I searched Google for Jimi Hendrix photos, and picked several images I thought would be helpful. I think it's important not to use too many reference images when trying to create a likeness of someone as each photo will show a slightly different look and too many references may cause some confusion. I chose one main reference image that best suited my plan. Several other images were used as reference images for the rest of the model (Fig.02).

For the sculpting I used a base body created in Maya, which I put into ZBrush. I usually sculpt the head first and once satisfied move onto the body. I exaggerated the muscle shape on the body and put sharp edges between muscles to clarify the body structure. I mainly used the hPolish, Clay Tubes and Move brushes for sculpting and refining the deformation of the body. The hPolish brush is good for reducing the volume while the Clay Tubes brush is good for building up the shape. In the refining process the sharp edges were removed or smoothed out. When sculpting an organic model I prefer



to use the hPolish brush instead of the Smooth brush, which removes the details with brush movement.

#### **DETAIL**

For the fine detail, the geometry was subdivided to 10 million polygons. As this made the model very heavy, it took quite a lot of time to undo. I stored the model as a Morph Target once I had the shape I wanted and added the detail to it. When I wanted to undo something I used the Morph brush, which is a lot faster than actually undoing. Fig.03 shows the brushes, strokes and alphas I used. I mixed them and used them like a clay scraper. It's not exactly the same, but it creates a similar outcome. This meant I could create rich details from multiple strokes.

During the sculpting process I tried to use brushes like traditional clay tools. My favorite brushes are Clay Tubes and hPolish as they are most like traditional modeling tools. Sometimes I



adjust the brush settings, but I mostly use these brushes at the default settings.

I modeled the guitar in Maya (Fig.04).

#### POSE

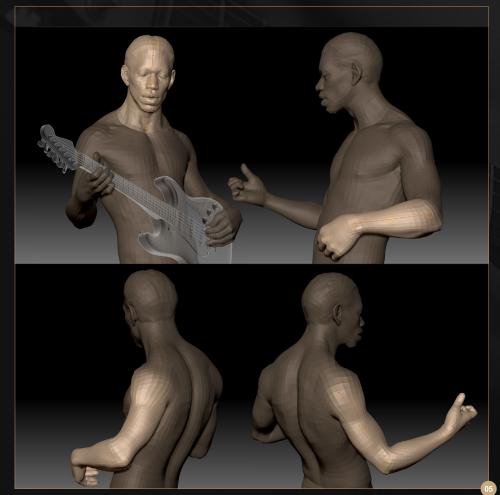
Transpose is a very convenient feature for posing in ZBrush. I went down to subdivision level 1 and put the guitar in the correct position, then posed the body. I then fixed the pose at the different subdivision levels whilst checking it from different angles. Since the bending and

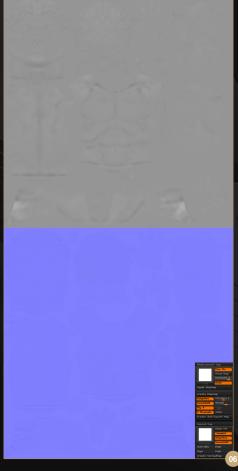


twisting broke the deformation of the arms, I needed to fix those areas (Fig.05).

#### Displacement Map and Normal Map

Fig.06 shows the displacement and normal maps with their settings. To create the displacement map I went to the lowest





### GUITARIST Making Of

subdivision level, stored the morph and then clicked on the Create DispMap button. For the normal map I went up two levels, stored the morph and clicked Create NormalMap.

The normal map is very subtle because it isn't generated at the lowest subdivision level, while the displacement map is. The normal map is for adding the detail to the displacement map when the model is rendered.

#### Rendering with Displacement Map and Normal Map

I assigned the displacement and normal maps to the blinn shader and added the lighting.

When it was rendered I found several tiny areas that were showing weird result caused by the displacement map. I fixed the displacement map in Photoshop. When I was satisfied with the



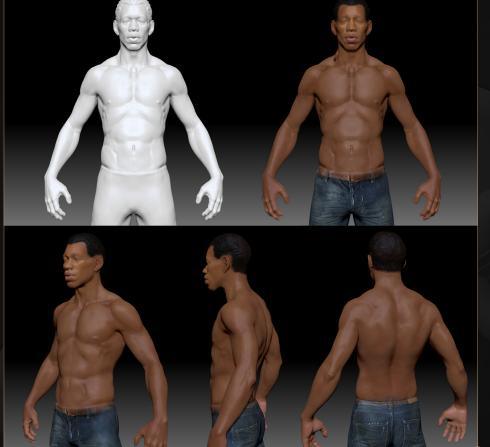
rendered shape the body mesh was assigned to the skin shader. (Fig.07)

#### **TEXTURE**

The texture was created in ZBrush. I used Polypaint for the body and Zappink for the guitar (Fig.08 – 09). Before painting the body I changed the material to SkinShade4. I combined the Standard brush, Color Spray stroke and Alpha 07. Fig.10 shows the settings for the brush I used for texturing.

#### HAIR

When I created the hair I checked the Dynamic option and generated the hair using the time slider bar until I was happy with the starting point. Then I reshaped the hair follicles until I





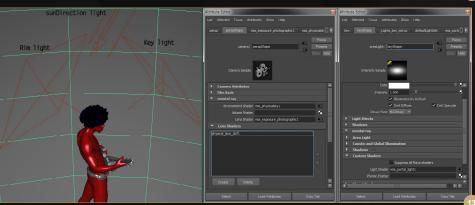


had a nice hair flow using the Move and Rotate tool. I also played around with the hair system options to adjust the volume, curl and color etc. I checked the Hair with Rendering option and continuously tweaked the hair follicles. I changed the hair shape until I was getting results I was happy with (Fig.11).

### Skin Shader

I put the color map into Photoshop and adjusted it to create diffuse, epidermal, and subdermal maps (Fig.12). The diffuse texture was desaturated from the color texture created in





ZBrush while the epidermal, and subdermal textures became more saturated.

### Camera and Light Setting

I used the mia\_exposure\_photographic lens for a mental ray lens shader, and the physical\_lense\_dof lens for depth of field. The key and rim lights are connected to each mia\_portal\_light. The rim light setting is almost the same as the key light. The difference is that the intensity is higher than the key lights and its color is slightly bluish (Fig.13).





# POST-PRODUCTION

I tried to get as close to the final result as I could in 3D, but I did some color grading in Photoshop like adjusting and saturating the color and increasing the contrast (**Fig.14**).

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# CONCLUSION

As always I enjoyed creating this character and learned many new techniques through this project. I hope my image inspires others (Fig.15).

# GUN PHIL PARK

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Or contact him at:
kmcism@hotmail.com

Issue 074 October 2011



With the release of 3DTotal's book, Digital Art Masters: Volume 5, we have some exclusive chapters for you...

This is more than just an artwork book. Not only does it feature full-color, fullpage images, but each artist has given a detailed description, in their own words, of the creation process behind each piece of published artwork. And they've done it especially for this book!

This month we feature:

"BARBERSHOP BEAR"

BY MIGUEL ALBA GUTIERREZ

DIGITAL ART MASTERS

#### BARBERSHOP BEAR

OFTWARE USED: 3ds Max, Photoshop, V-Ray



Di 3go Maix, Princesings, versay

INTRODUCTION

The concept for this project came to
me during one of my trips to Oporto.

Whilst on a walk with my partner
through some of the old streets, I took
a photograph of an old barbershop.
It gave me the idea to make my own

I wanted to focus more on improving my compositing knowledge and so with this in mind I dedicated less time to the 3D software compared to trying to produce the final image by making all the necessary changes and render corrections using Photoshop.

I found it a bit hard to find useful references for this project. I wish I had found blueprints for the main object.







NORMALLY I LIKE TO MODEL AS MUCH AS I

CAN AND TRY TO USE DISPLACEMENT MAPS
AS LITTLE AS POSSIBLE AS THESE CONSUME
A LOT OF MEMORY

in the scene, but I had used some old photographs I found on the internet which lengthened the duration of the modeling phase. All modeling work was done in 3d Studio Max (Fig.01).

to them. The most complex models were the seat and radio for which I used poly modeling (Fig.02 – 03).

and so it was quicker to use displacement as I already had some maps for this sole purpose. Therefore I used displacement for some parts of the main furniture, for example the effect of carved wood (Fig.04).

TEXTURNO
When tecluring issually search for tectures either in my
own library or on the internet. Or 10 yand paint them in
Photohop. The case of the leather tecture for the sea,
1 couldn't find a nice tecture or find a photograph of any
oped leather so intered it used some photograph of any
waste cattiboard and added some scratches and dirt
or in service of the season of the country of the country of the country
oped leather so interest in use this tecture as the Diffuse
map of the leather material and then I added bump and
glossness reflections with Fremel reflection activated to
achieve the final result (Fig.95).

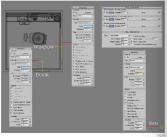
It can be very useful to use the VRay dirt on some materials to create dirt around the crevices and corne and I did this on the main furniture to highlight small

LIGHTING & RENDERING
For this work I used VRay to both render and set up the
lighting. I used two VRayLight planes to simulate the
light from the window and open door, and one VRayLight
sphere for the sun (Fig.06).









Apart from the final RGB render I added some other channels in order to use them in the post-production phase. For this work I rendered the following channels: ZDepth, Reflection, Refraction and Render ID (Fig.07).

Another useful render pass is Ambient Occlusion (Fig.08).

POST-PRODUCTION

As you can see, the final render I obtained was dark, yellowish and also too satur

It really needed some corrections and effects to make it look more artistic. You ci

the changes I made between the render and the final image in Fig.09.





Then added the Octobion pass to increase the depth of the corner shadows, which was pasted into a new layer with the Blending mode set to Multiply and Opesity set all society in the Blending mode set to Set I sale added some liquidet and chromatic grain to lend it a more photographic look. To create the vignette effect a dode a layer with the Blending mode set to Set Light and then painted a non-uniform shadow around the corners. To produce the chromatic grain it histly created a new layer, filled it with a solid grey color and set the Blending mode to Overlay. I then added color hoise with a Gaussian distribution. To reduce the Sharpness of the notes I then applied some Gaussian Blur.

#### CONCLUSION

y workflow. I still need to work on my skills in ing better textures and lighting and, as I said in troduction, I want to improve on my compositing. I you have gained some useful information from my

#### ARTIST PORTFOLIO



# DIGITAL ART MASTERS



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Kuciara, Daarken, Kekai
Kotaki & Marek Denko









#### CHAPTER 1 - MODELING THE BASE MESH

Software used: 3ds Max

Welcome to the Swordmaster tutorial series. In this series of tutorials I will show you all of the steps commonly used in modern character asset creation for video games, including base mesh modeling, sculpting, high poly modeling, low poly modeling, unwrapping, baking, texturing, rigging and we will finish with tips on how to display your character in a real-time environment for your website, demo reel or portfolio.

#### INTRODUCTION

In this portion of the series we are going to cover creating a base mesh model. A base mesh is the model intended for sculpting and ultimately is the beginnings of what our high poly model will be. For this project, the base mesh will include organic sections such as the face and body, which will then be sculpted and used as a basis for armor design in future sections.

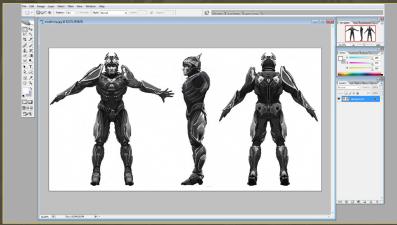
We begin by gathering references. In this case concept art has been provided for us in the form of an action pose and a standard model sheet showing the front, side and back of our Swordmaster character. Different projects will require a different level of accuracy; once you become comfortable with your craft it is perfectly fine to model in perspective view or freestyle details (Fig.01a – b).

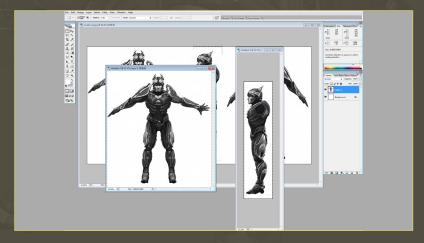
To begin, I split up the character based on the views that I will need. For me this is just going to be a rough guide to help ensure the accuracy of proportions. When it comes to detailing, I tend to switch to a freestyle workflow. In Photoshop, select the area that includes the front view of the character. Press Ctrl + C to copy the information, open a new document and save it as new image. Repeat the process for the side view making sure to take note of the height and width of each image (Fig.02).

Fig 01a



Fig 01b





Next, open up Max and create a box by going to the Create panel and then navigating to Geometry > Standard Primitives. Click and drag in the Perspective viewport to create the box primitive. In the Width and Height roll out menus, enter the dimensions of your front view image. In my case, the image is 1686 x 1878 units (Fig.03).

The box now needs a material as a perfectly black box makes it very hard to pick out edge details. We also need this material to begin setting up our reference images. Press M on your keyboard; this will bring up the Material Editor. You'll notice a nice collection of blank shader balls. Click on the first shader ball and rename it "Front". This will be the material used to display our front view reference image. Move over the object, right click and select Convert to Editable Poly from the quad menu that appears (Fig.04).

Click on the Diffuse button and then click on Bitmap. This will allow a 2D image to drive the basic color information within your material. Navigate to your front reference image and click OK. Select your front view box and click the Assign Material to Selection icon or, alternatively, click and drag the shader ball onto your model (Fig.05).

Create another box and give it the dimensions of your side view image in the Length and Height coordinates. To make sure that both boxes align perfectly, you can select each box and enter the sizes into the XYZ coordinates at the bottom of the screen (Fig.06).

Create a new material in the material editor and enter the name "Side". This will help keep things organized as you move along in the project or need to change anything. Apply this material to the new object you created (**Fig.07**).

Next create a new box and enter edge mode by pressing 2. Split the box down the middle by selecting a ring of edges in the XZ plane and



Fig 03

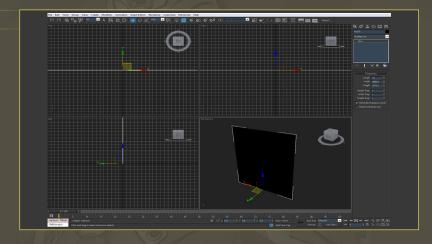


Fig 04

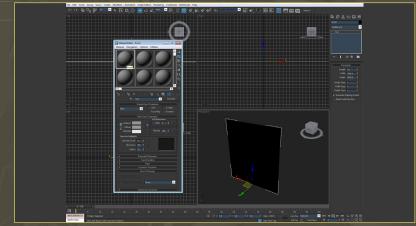
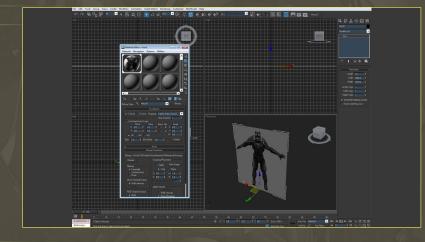


Fig 05







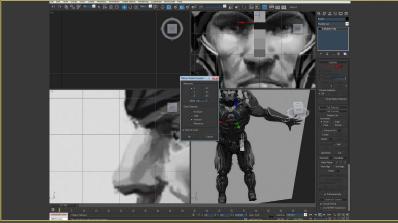
#### SWORDMASTER 2 Chapter 1 - Base Model

# **3dcreative**



The first law was the state and a state an





pressing Connect in the Edit edges panel. By simply clicking the Connect button, it will use whatever value was previously entered. By default the value is 1. By clicking the details box next to Connect, an options menu appears that allows you to adjust this value. This rule can be applied for most functions in Max (**Fig.08**).

Fig 07

Fig 08

Fig 09

Fig 10

Enter face mode by pressing 4 and delete all of the faces of the box except for the left side on the XZ plane. This grid will be used as the basis for the rest of our character's face. Enter object mode and move this new grid so that the bottom right corner roughly lines up to the mid-point between both characters' eyes (**Fig.09**).

The main modeling technique I use is edge extrusion. This means that rather than taking a primitive and cutting away at it until it resembles the shape needed, I duplicate edges along paths and fill in the remaining areas. After some practice, I find that this technique allows me to quickly block out forms, requires less clean-up work and gives more control over edge flow.

Begin by selecting the bottom most edge, holding Shift and moving the edge down in the Z axis. This essentially creates a new face and you immediately begin controlling the connecting edges. Repeat this process until you reach the tip of the nose, making the faces more or less as squares for better subdividing during sculpting.

At this point I also begin working in symmetry, which can be accomplished in various ways. I prefer to instance the model, mirrored on the X axis. This doesn't require us to depend on a modifier and allows us to make duplicates of the original object which will carry changes over to the new objects. With the object selected, navigate to the top of your screen and click the Mirror icon. When the options menu appears, select Instance and the X axis. An instance means the new object will copy future changes made to the original object (**Fig.10**).

page 85

Chapter 1 - Base Model SWORDMASTER 2

From here on out, we will basically be using the same technique to mark key landmarks of our base mesh. The key to a good base mesh is evenly distributed polygons, meaning that all of the faces are roughly square and that no area is denser than the others. However, if the model is broken into different sections (e.g., a head and a body) the head could be denser than the body depending on what you need. Another important thing to keep in mind is that ZBrush does not play kindly with triangles, so the model should be mostly made of quads with triangles reserved for areas that won't need sculpting attention.

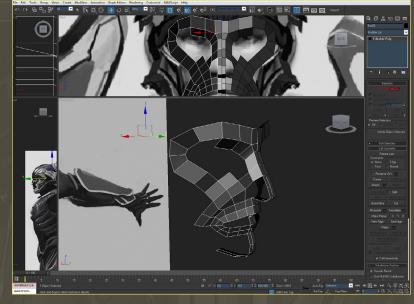
Continue to extrude edges to mark the extreme angles of the character's face, outlining the brow, bridge of the nose and the chin. Try not to go into too much detail when creating the base mesh as a large portion of the high resolution work will be done in ZBrush. Also, the more dense a mesh is the more complicated it becomes to work with as there are more vertices to manage (Fig.11).

Next, using the front reference image as a guide, begin marking the character's cheekbones by connecting the outer brow to the top corner of the lip. This mimics the muscles underneath the skin that allow our faces to squash and stretch during extreme poses. Begin to define the shape of the lips and give depth to the eye sockets by defining the brow more (Fig.12).

Now you can begin to fill out the face by defining the eye sockets more by extruding edges inward to give them some depth. You can also fill in the lips by connecting the top lip edges and bottom lip edges and filling in the nose. Don't bother detailing the nostrils as you can add these details in ZBrush (**Fig.13**).



Fig 12



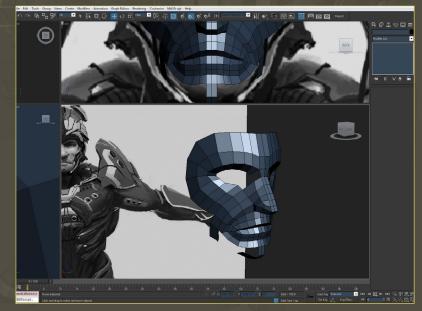


Fig 14

With the brow and cheeks defined begin filling in the eye sockets by grabbing the boundary of edges and extruding them inwards, connecting the top and bottom edges together with a connecting edge dividing them. This will help place our eyes when we sculpt and by using simple geometry it allows you to experiment with different eye shapes and details without everything becoming too messy (Fig.14).

If you find these edges too sharp and you would like to soften the area, select the vertices in that area and in the Modify panel scroll to Relax. This will add a Relax modifier that averages out the position of the vertices without adding any geometry, which is good for smoothing out tight areas like eyes and mouth corners. Once this modifier is added you can increase the intensity, with 0 being your original model and 100 being fully relaxed, and the amount of iterations which more or less repeats the function. So a Relax modifier of 0.5 with 2 iterations is the same as a modifier with the strength of 1 at 1 iteration. Once you are done with the modifier, right click over it in the stack and click Collapse To. This will bake any changes down to your model and allow you to continue modeling (Fig.15).

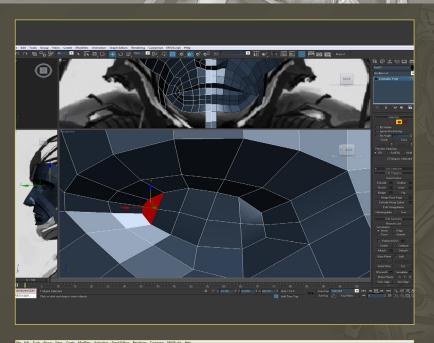


Fig 15

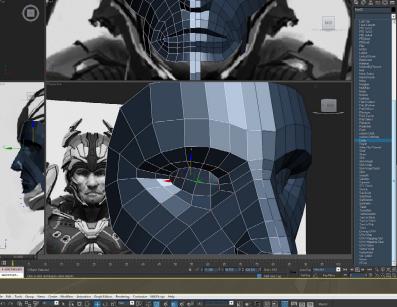


Fig 16

The last step you need to take is to fill out the character's cheeks and jaw, connecting the edges of the chin to the ring of edges creating the forehead. For this character you just need to create the face as the rest of the head will be covered by armor. However, using this same technique you can easily see how the shape of the cranium could be completed (Fig.16).



With half of the face complete, you need to connect both sides. In the Modify panel, right click Editable Poly and select Make Unique. This causes the object to no longer affect its instance. It also allows us to attach one model to the other (Fig.17).

With either side of the model selected, scroll down in the modifier and select Attach. This will change your cursor to a crosshair type object which means that attach mode is active. This means any object that you select will become part of your original model. Select the other side of your character's head and right click to end the operation (Fig.18).

After you attach the halves of the face together, there will still be a seam running down the middle. To fix this select the boundary edges, and click the Weld action in the Modify panel. If the edges do not weld together right away, you can open the options menu and raise the tolerance amount. This will cause edges or vertices within that distance to become fused together (Fig.19).

With the head complete, it is time to move onto the character's body. Here is where you can start to stray from the model sheet and I believe this process comes down to personal preference and what your project requires. A rig pose may be predefined, which restricts you to modeling your character a certain way. So you may need to model to a rig rather than rig to a model. Modeling a character in the standard T pose - that is with the character's arms raised to be parallel with the floor - can cause stress on the mesh and end up giving your character a box torso when the arms are lowered, but it is also incredibly easy to work with as you are dealing with straight edges. Modeling at a perfect 45 degree angle can be easier to rig, but can be a touch awkward to look at. When not dealing with one of these standardized rigs, I like to relax the arms a bit from a 45 degree pose, basically dropping the hands inward a touch with the back of the hands facing outwards. To me, this leaves



Fig 17



Fig 18

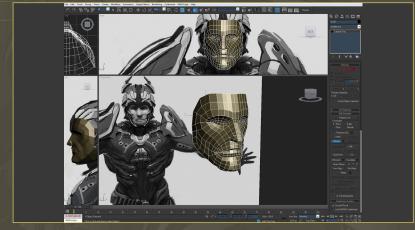


Fig 19

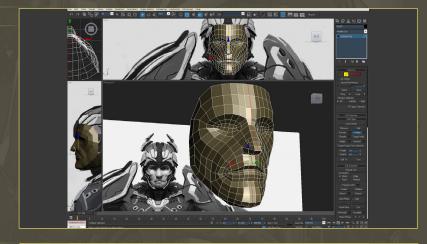


Fig 20





Fig 21

the character looking natural and takes away any stiffness from the usual poses (Fig.20).

Using the same technique create a box for the neck, extruding edges from one edge to follow the length of the neck from the chin to clavicle and working from there horizontally to create the rough shape of the neck. To mark the area, rough out the general length of the trapezius muscle, which helps give an idea of where the deltoids will begin.

Fig 22

Fig 23

Fig 24

The general idea here is that you will be creating a character's under armor, which will then be sculpted as a basis for the real armor pieces and organic sections in between (Fig.21).

Extrude edges from the base of the clavicle all the way down to the waistline, adding a slight indication of where the chest will protrude. Using the side reference shot as a guide, begin to block in a loop for the entire waist. This quickly helps to show how wide the character will be and will also act as an anchor for connecting edges to the chest and legs (**Fig.22**).

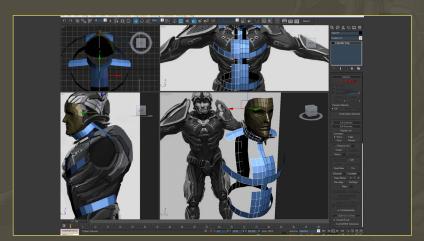
Next begin widening out the chest and stomach.

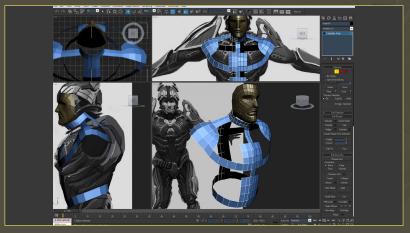
For the most part, the stomach should be practically cylindrical with loops running horizontally the whole way around. The edges making up the bottom of the pectoral muscles, however, will carry through into the bottom of the deltoids and around the back into the spine. This helps define the armpit area and the mass for the shoulders that is created when the arms raise or lower (Fig.23).

From here define the deltoids mass. I like to create a loop that circles the upper portion and loops around the arm. This is mainly from an animation standpoint that has carried over to my base model creation technique, but it also helps to define the valley where the clavicle, trap and delt meet (Fig.24).









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To complete the body, the rest of the work is really just filling out these major points that we have defined with clean topology, keeping the mesh equally dense and composed of four-sided polygons. Much like the shoulders you should define the hips with a loop that will circle the legs. I also like to continue the edge flow of the shoulders across the entire back (Fig.25).

When it comes to hands, treat them as if they are an entirely new object. Rather than working from a character's wrist to the finger tips, begin building a finger. The first step is to simply make a cylinder and delete the end caps. Add a few edge loops around the finger to retain mesh fidelity when it becomes subdivided. This initial piece can be as complex as you need it to be and what works best for your workflow. Some artists are fine with a four-sided finger; I like to go a little heavier and hover around eight edges (Fig.26).

From here use the edge extrusion method to begin building out the rest of the finger. Rather than modeling the finger straight, try to give it a slight curve. This will give the finger a more natural feel and help you visualize the bends. For the knuckles I cut into the faces that would need a protrusion and push the center loop out just a touch. Changing the silhouette ever so slightly in this way helps get rid of the "sausage fingers" look (**Fig.27**).

Put fingernails in your fingers by selecting the faces near the tip of the finger and in-setting them with a bevel. After this grab the edges closest to the nail base and overlap the nail geometry, creating the mass near the cuticle. I usually sway from this type of detail in a base mesh, but it can be easily flattened out in ZBrush (Fig.28).

Next take the finger you created and duplicate it three times. In general try to keep the finger that you created as the middle or ring finger, then adjust the different fingers' lengths. You'll notice that the fingers on a human hand are



Fig 25

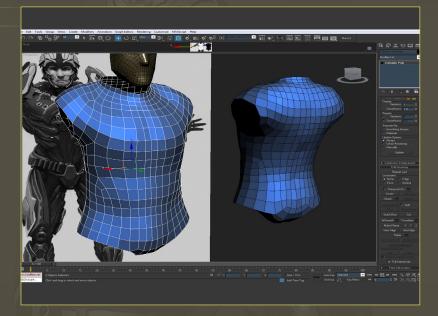


Fig 26

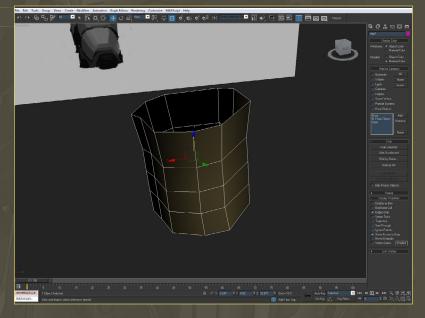
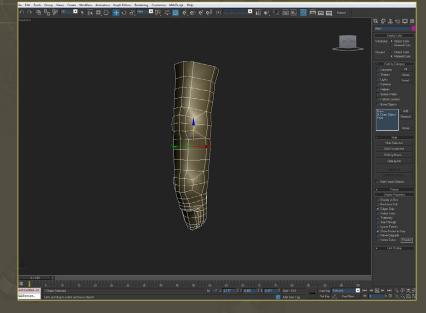


Fig 27

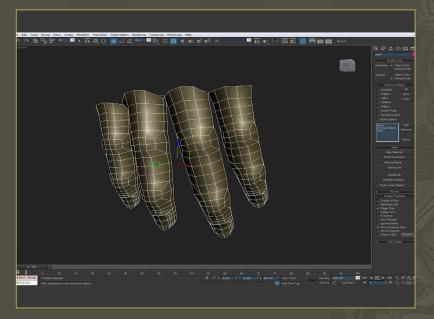




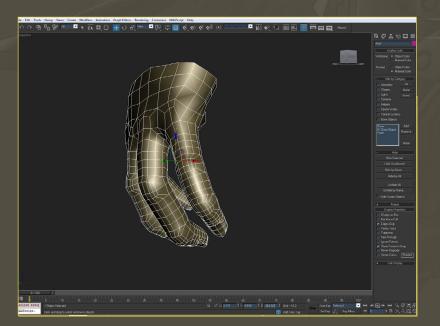
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Fig 28



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not the same length. In **Fig.29** you can see the right hand, so the fingers will increase in length from the pinky to the middle finger with the index finger's tip lining up with the last knuckle on the middle finger.

After this fan out the fingers as if they are stretching apart by rotating each one, much like the previous step. Also stagger the fingers to offset the knuckle placement. You'll notice that when you make a fist, your knuckles are not perfectly in line. Connect the base of the fingers to create the thin webbing that stretches in between fingers near the knuckles. To give the hand a little more life, bend the fingers slightly at the knuckles, as if there is a little tension. This helps set landmarks on the fingers for sculpting and makes the fingers look less boring. Add in more loops for the webbing near the knuckles to retain the model's shape when it becomes subdivided.

Next you can begin building the hand by making the knuckles and connecting them to the fingers. Try not to go too overboard here and try to fan out the border of the finger at the knuckle and join them with the webbing geometry created earlier. This creates a loop around the finger at the knuckle that helps isolate each finger and defines the knuckle protrusion. If this hand were to be weighted in a game scenario the palm is generally weighted to one bone with three bones for each finger. So try to model with that in mind, leaving a defined edge that would be dominated by the hand bone with enough geometry between the hand and first knuckle on the finger to retain the shape when bending during animations (Fig.30).

Using the edge extrusion method begin to build out the palm and back of the hand. Follow the same rules as you did for the fingers. You don't want it perfectly flat and straight. Try to show the meat of the hands by forming pads on the outer edges with a dip in the center where it is mostly flesh on bone. For the back of the hand, you want it to be rather flat (as in not defining veins,

Fig 29

knuckles and the metacarpals), but to curve down towards the palm slightly on the inner and outer edges.

Fig 31

Fig 33

From here continue extruding edges to build out the back of the hand to the wrist. On the palm try to begin the edge loops for the thumb as soon as you can. The thumb will affect a large part of the hand as it has a wide range of motion that requires it to collapse and compress on the palm and back of the hand. Defining the flesh that creates the base of the thumb, reaching into the center of the palm, can be greatly beneficial for this deformation. Try to keep the same edge that would run down the center of the fingers, as if it were cutting the finger in half, into the thumb. This helps define the webbing and muscles between the index finger and thumb that will do most of the stretching and squashing as the hand spreads apart or makes a fist.

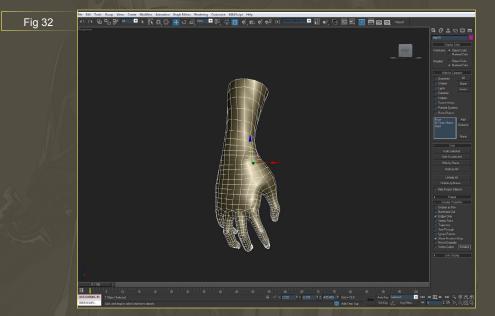
Next create the thumb. Try to make the base of the thumb have the same amount of edges as the fingers so that you can duplicate a finger tip, move it into place and easily connect it to the rest of the hand. By duplicating the faces of a fingertip you can modify it quickly to create the broader tip of the thumb as well as the more bulky knuckle. From here connect the thumb's tip to the hand by bridging edges. Divide the thumb with a few edge loops, creating a taper from the hand to the knuckle (**Fig.31**).

Finally connect the hand to the rest of the arm. The key part to keep in mind is how the hand tapers into the wrist and how the heel of the palm drops down from the inner forearm. From here extrude edges out of the wrist and continue to the elbow area, usually defining the subtle twist and bulk of the muscles that the forearm would create (Fig.32).

This is a good time to place the hand roughly where it should sit in a relaxed position. For the most part the character's elbow should touch the bottom of the ribcage and the fingertips should rest near the middle of the upper leg









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Fig 34

when fully relaxed. This helps you visualize the character's proportions quickly and will allow you to easily piece together the rest of the upper body (Fig.33).

Much like you did with the face and body, mirroring the hand as an instance gives a nice quick preview (Fig.34).



Fig 35

Next create a quick approximation model of where the character's feet will go. This doesn't have to be perfect or detailed as in this case we are going to create the boot as a high poly when we do the sculpting. This is simply a way to make the character not look goofy as a character with no feet can really trick the eye into thinking that the proportions are off (**Fig.35**).

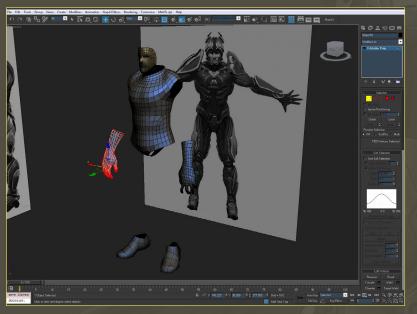
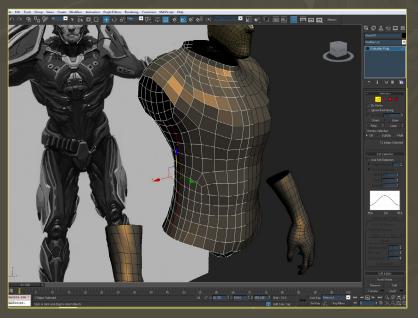


Fig 36

Now the process of connecting the arm to the body begins. Keep an eye on the boundary edges of each piece (the forearm and the arm hole) as you want them to be even. Now is a good time to add or collapse edges as you see fit. You can select a boundary by pressing 3 on your keyboard. This will select any open edges. In the case of my model I need to add edges to my torso (Fig.36).



Chapter 1 - Base Model SWORDMASTER 2

To make the amount of edges equal for the arm and torso you need to collapse a few edges around the wrist. Once the edges are collapsed, this will create an undesirable triangle that can be corrected by connecting two triangles with a horizontal edge that runs around the wrist (Fig.37).

Fig 37

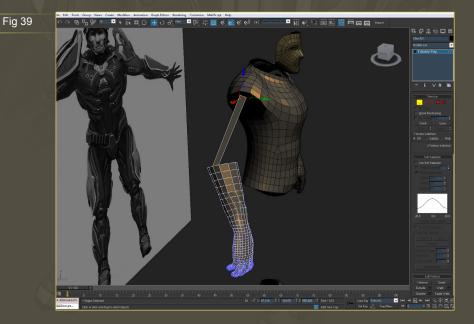
Fig 38

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Next extrude the boundary edge of the forearm to roughly where the character's elbow will be, checking all angles of the extrusion to make sure that there is no awkward bend in the arm (**Fig.38**).

The first body files with Market about to Suph Mark

Next extrude an outer edge to meet the tip of the deltoid area. The idea here is to block out the length of the upper arm and elbow. I find that it is easier to keep the base mesh clean if you do not factor the twist of the arm into the geometry. The twist of the muscles can be shown in the sculpt later and propagated into the low poly much later down the line (Fig.39).



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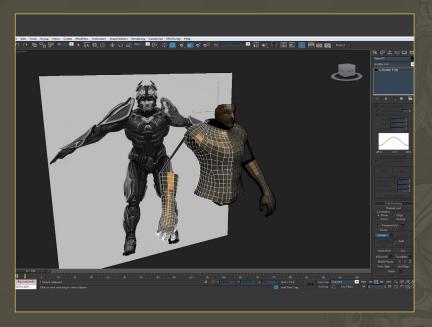


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Fig 40

The next step is to attach the body to the arm. First select the body and navigate to Attach in the Modify panel. Select the arm and right click to exit out of the Attach function. This will add the arm geometry to the body and will allow you to properly connect the two. As you can see, this will also carry the change over to the instanced half of the body (**Fig.40**).



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Fig 41

Next use Weld to connect the recently created edge to the nearest edge on the torso (Fig.41).

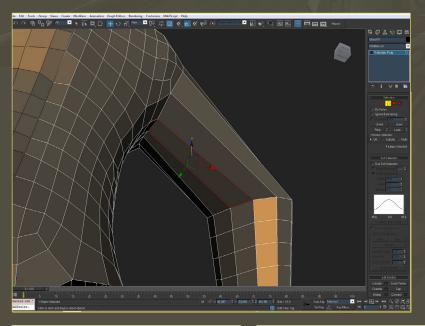


Fig 42

Since the arm and torso have the same amount of edges on the boundary, it is easy and simple to create the rest of the upper arm by selecting the Bridge function to connect them with a new polygon. Continue this process around the entire arm (Fig.42).

3ds max Chapter 1 - Base Model SWORDMASTER 2

To soften up the elbow area and to avoid any pinching when the model is subdivided in ZBrush, select the loop of vertices that make up the actual bend in the arm (Fig.43).

Fig 43

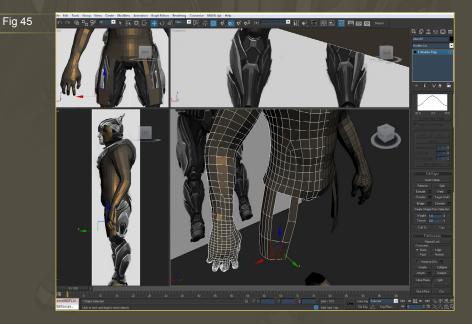
Fig 44

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Next expand my vertex selection by clicking Grow while in vertex mode. This will add adjacent vertices to your selection around the arm. With all of the vertices selected in the elbow region, apply a Relax modifier which will average out the vertices around the elbow and give us a smoother transition (Fig.44).

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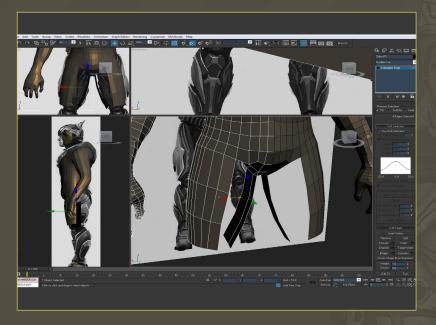
Now move onto the legs. For this character (as mentioned earlier) we're just going to focus on the actual leg and not the feet as this character's design shows that from the knee down is practically all armor plating which will be covered in our high poly modeling section. Grab a few edges on the hips and extrude down to where the knees would roughly be. From here begin to build a loop around the leg, of course, using the front and side reference shots as a guide (Fig.45).



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Fig 46

Do the same for the inner thigh, extruding an edge from the crotch down to roughly the same area as the opposite side, adding the same amount of horizontal edges so that both sides can be easily connected (**Fig.46**).



The first control of the control of

Fig 47 From here use the Bridge function to connect both sides of the leg that you have created and add a few vertical edges to pull out and add

some bulk to the upper leg to roughly match the side reference (**Fig.47**).

The first fi

Fig 48 Now add vertical edges running down the front and back of the leg to match the amount of boundary edges on the hips. This is basically the same process we followed for connecting

the arm, just that the amount of edges for the body shouldn't be changed (Fig.48).

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Roughly block out the shin area, extruding edges from the upper leg/knee area. I suggest extruding the edge fully down to the ankle and adding horizontal edges to round out the shape and even out the polygon distribution. Again this area is mostly just to assist your eye in seeing the character's proportions and will be modified heavily in future steps (Fig.49).

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Just like you did with the face, make one half of the body unique and attach it to the other half. Grab the center edges and weld them together to create one consecutive mesh.

Check your mesh by entering boundary mode (3) and pressing Ctrl + A to select all of the open edges of your model. The only edges highlighted should be the neck and the holes near the ankle. If not, make sure that you weld these other edges together before moving on as it could cause problems when subdividing in ZBrush (Fig.50).

The state of the s

This completes our base mesh modeling section. From here, we will export the model to be used in ZBrush where we will quickly sculpt a roughly armored character, build these armor pieces more cleanly in Max and move on to polishing our sculpt (**Fig.51**).

Fig 51

Fig 49

Fig 50

# GAVIN GOULDEN

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http://www.gavimage.com/
Or contact them at:
gavin@gavimage.com



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# THE SITE RE-LAUNCH!

**3DTOTAL.COM NEW WEBSITE - 10TH OCTOBER 2011** 



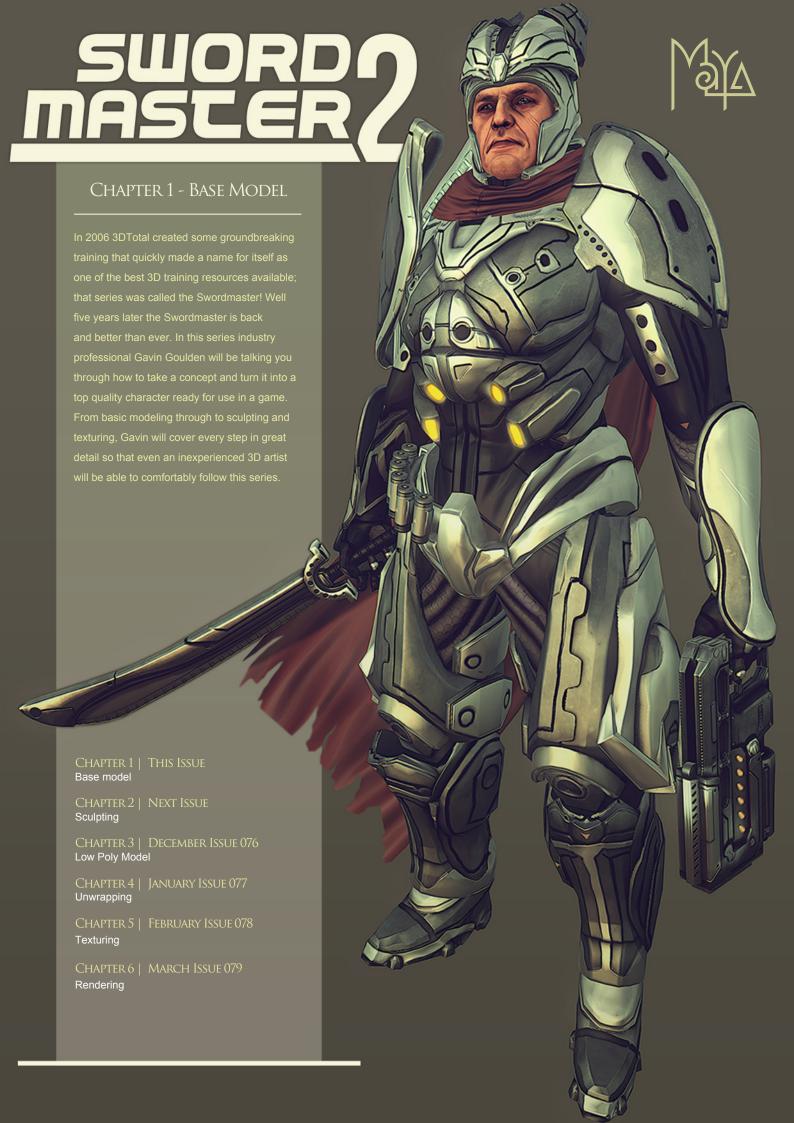
BASED ON YOUR FEEDBACK AND SUGGESTIONS, WE'RE ABOUT TO RE-LAUNCH A NEW VERSION OF WWW.3DTOTAL.COM

Thanks to Mike Heald of Fully Illustrated we're introducing a brand new design, which includes a whole range of new features, layouts and improved searching and functionality.

This first release, which is going live on Thursday 6th October, is an initial site overhaul and will lead the way for further additions and improvements over the coming months.

We can't wait to find out what you think!







#### Chapter 1 - Base Model

Software used: Maya

Welcome to the Swordmaster tutorial series. In this series of tutorials I will show you all of the steps commonly used in modern character asset creation for video games, including base mesh modeling, sculpting, high poly modeling, low poly modeling, unwrapping, baking, texturing, rigging and we will finish with tips on how to display your character in a real-time environment for your website, demo reel or portfolio.

#### INTRODUCTION

In this portion of the series we are going to cover creating a base mesh model. A base mesh is the model intended for sculpting and ultimately is the beginnings of what our high poly model will be. For this project, the base mesh will including organic sections such as the face and body, which will then be sculpted and used as a basis for armor design in future sections.

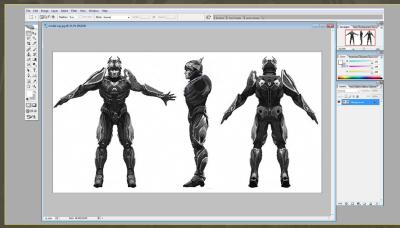
We'll begin by gathering our reference. In this case, concept art has been provided for us in the form of an action pose and a standard model sheet showing the front, side and back of our Swordmaster character. Different projects will require a different level of accuracy. Once you become comfortable with your craft it is perfectly fine to model in perspective view or freestyle details (Fig.01a – b).

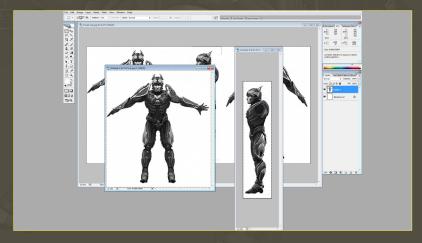
To begin I split up the character based on the views that I will need. For me, this is just going to be a rough guide to nail proportions. When it comes to detailing, I tend to switch to a freestyle workflow. In Photoshop select the area that includes the front view of the character. Press Ctrl + C to copy the information. Open a new document and save it as new image. Repeat the process for the side view, making sure to take note of the height and width of each image (Fig.02).

Fig 01a



Fig 01b





Chapter 1 - Base model | SWORDMASTER 2

Next, open up Maya and create a box by going to the Create panel and then navigating to Polygon > Primitives. Click and drag in the Perspective viewport to create the box primitive. In the X and Y rollout menus, enter the dimensions of your front view image. In my case, the image is 1686 x 1878 units. You can also enter an equal percentage if working smaller suits; for example, 422 x 470 will give you the same result as the ratio between both dimensions is the same (**Fig.03**).

The box now needs a material as we will be using this new object as one of our reference images. Navigate to the Hypershade menu by clicking Window > Rendering Editors > Hypershade. This will pop up a window containing all of the shaders in your scene. Create a new Blinn material by clicking on the Blinn tab. With your object selected, right click over the new Blinn material and click Assign Material to Selection (Fig.04).

If you double click on the Blinn material its properties will appear in the Attribute Editor, generally to the right side of the screen. Click the options button next to Color and choose File from the options provided. This will allow you to navigate to your front reference image and selecting it will use this reference image to drive the color information of the shader. To make things easier for future reference, name the material "Front" in the Attributes Editor (Fig.05).

Create another box, giving it the dimensions of your side view image in the X and Y coordinates (Fig.06).

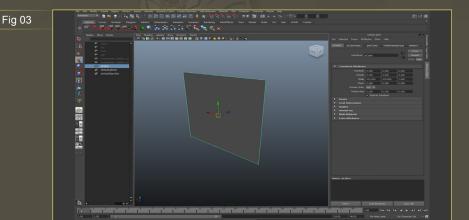


Fig 04

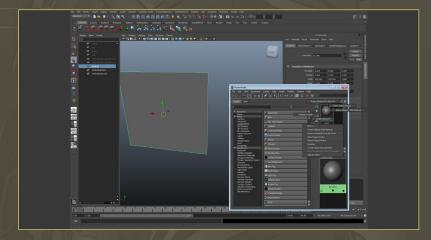


Fig 05







### SWORDMASTER 2 Chapter 1 - Base model

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Fig 08

Fig 09

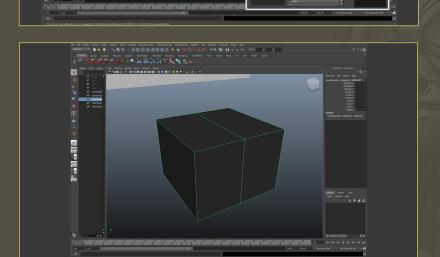
Create a new material in the Hypershade editor and enter the name "Side." This will help keep things organized as you move along in the project or if need to change anything. Apply this material to the new object you created (**Fig.07**).

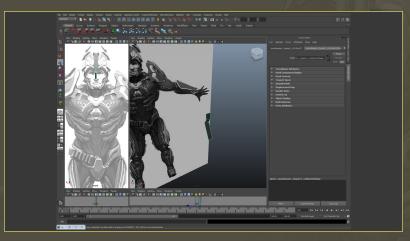
Next, create a new box and enter edge mode by right clicking over the object and selecting Edge from the menus displayed. Split the box down the middle by selecting Insert Edge Loop when you press Shift + right click. This will pop up a dialog box that allows you to set the number of edges you'd like. Enter 1 and select the center ring on the XZ plane – this will add a line exactly in the middle of the box (Fig.08).

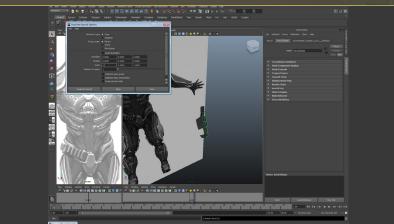
Enter face mode and delete all of the faces of the box except for the left side, on the XZ plane. This grid will be used as the basis for the rest of our character's face. Enter object mode and move this new grid so that the bottom right corner roughly lines up to the mid-point between the character's eyes (**Fig.09**).

The main modeling technique I use is edge extrusion. This means that rather than taking a primitive and cutting away at it until it resembles the shape needed, you would duplicate edges along paths and fill in the remaining areas. After some practice I've found that this technique allows me to quickly block-out forms, requires less clean-up work and gives you more control of the edge flow. Begin by selecting the bottom most edge. Hold Shift + right click and select Extrude. This essentially creates a new face and you can immediately begin controlling the connecting edges. Repeat this process until the tip of the nose, leaving the faces more or less as squares for better subdividing during sculpting (Fig.10).

At this point you should begin working in symmetry, which can be accomplished in various ways. I prefer to instance the model, mirrored on the X axis. This doesn't require us to depend on a modifier and allows us to make duplicates of the original object which will carry







Close.

changes over to the new objects. With the object selected, navigate to Edit and select Duplicate Special (Options). This will show a dialog that allows you to choose from a Copy or an Instance. An instance means the new object will copy future changes made to the original object. Choose that and enter -1 for scale in the X axis — this will essentially flip the new model on the X axis and keep any future changes made to the original model. Click Duplicate Special and then

From here on you will basically be using the same technique to mark key landmarks of our base mesh. The key to a good base mesh is evenly distributed polygons, meaning that all of the faces are roughly square and that no area is denser than the others. However, if the model is broken into different sections (e.g., a head and a body), the head could be denser than the body depending on what you need. Another important thing to keep in mind is that ZBrush does not play kindly with triangles, so the model should be made of quads with triangles reserved for areas that won't need sculpting attention.

Continue to extrude edges to mark the extreme angles of the character's face, outlining the brow, bridge of the nose and the chin. Try not to go into too much detail when creating the base mesh as a large portion of the high resolution work will be done in ZBrush. Also, the denser a mesh becomes the more complicated it is to work with as there are more vertices to manage (Fig.11).

Next, using the front reference image as a guide, begin marking the character's cheekbones by connecting the outer brow to the top corner of the lip. This mimics the muscles underneath the skin that allows our face to squash and stretch during extreme poses. Also begin to define the shape of the lips and give depth to the eye sockets by defining the brow more (Fig.12).

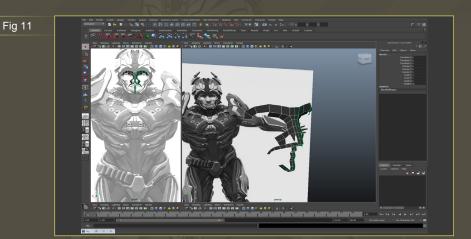


Fig 12

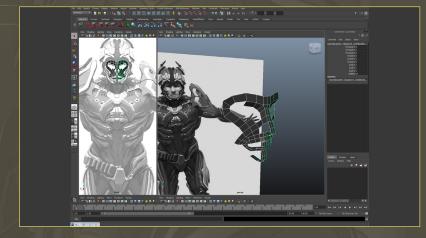
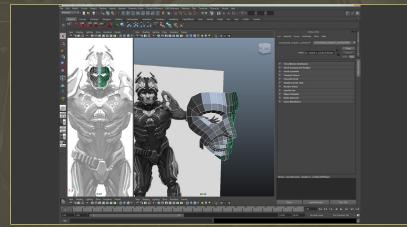
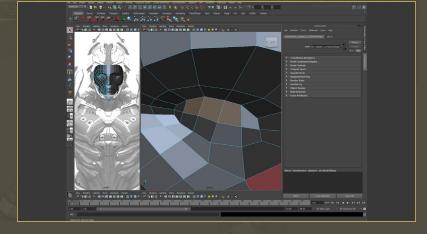


Fig 13

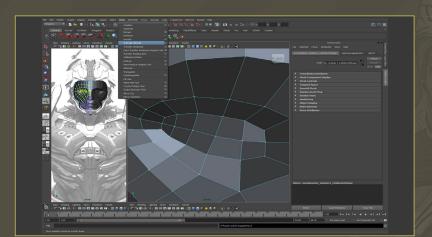


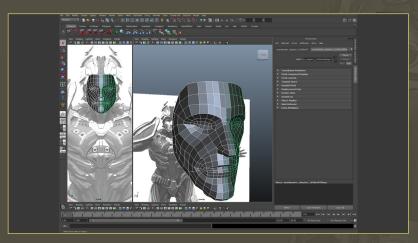


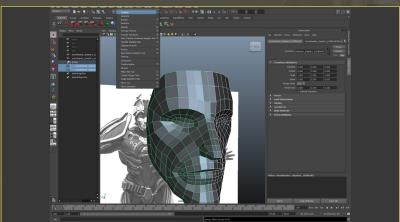


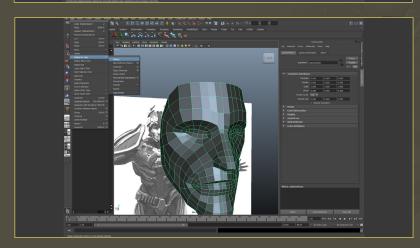
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Now begin to fill out the face by defining the eye sockets, extruding the edges inwards to give them some depth, filling in the lips by connecting the top lip edges and bottom lip edges and filling in the nose. Don't bother detailing the nostrils as, again, this can be done in ZBrush (**Fig.13**).

With the brow and cheeks defined begin filling in the eye sockets by grabbing the boundary of edges and extruding them inwards, connecting the top and bottom edges together with a connecting edge. This will help place our eyes when we sculpt and the simple geometry will allow us to experiment with different eye shapes and details without becoming too messy (Fig.14).

If you find that these edges are too sharp and you would like to generally soften the area, you can select the vertices in that area and in the Mesh tab under Polygons you can adjust the smoothing amount in the options dialog to be higher and lower as needed. Also click Apply multiple times to reach the desired effect. Averaging vertices essentially relaxes the vertex's position and smooths out the area without adding more geometry (Fig.15).

The last step we need to take is to fill out the character's cheeks and jaw connecting the edges of the chin to the ring of edges creating the forehead. You just need to create the face as the rest of the head will be covered by armor. However, using this same technique you can easily see how the shape of the cranium could be completed (Fig.16).

With our half of the face complete we need to connect both sides. In the Mesh tab, with both halves selected, select Combine (Fig.17).

This new object still retains old information from the previous models and will need to be cleaned up. To do this, select the face model and navigate to Edit > Delete by Type > History (Fig.18).

Fig 18

Fig 15

Fig 16

Fig 17

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Fig 19

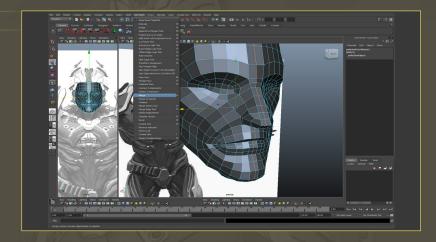


Fig 20

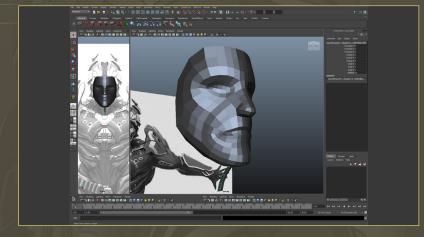


Fig 21

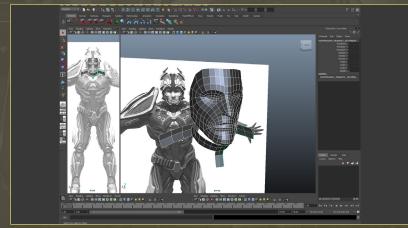
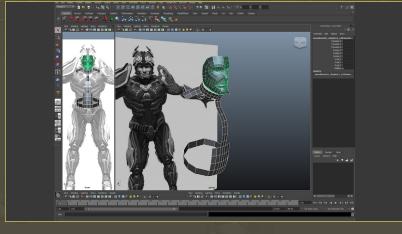


Fig 22



After you attach the halves of the face together there is still a seam running down the middle. To fix this, select the boundary edges and click the Merge action in Edit Mesh. If the edges do not weld together right away, you can open the options menu and raise the tolerance amount. This will cause edges or vertices within that distance to become fused together (Fig.19).

With our head complete, it is time to move onto the character's body. Here is where you can begin to stray from the model sheet, but this comes down to personal preference and what your project requires. A rig pose may be predefined, which restricts you to modeling your character a certain way. You may need to model to a rig rather than rig to a model. Modeling a character in the standard T pose (that is with the character's arms raised to be parallel with the floor) can cause stress on the mesh and end up giving your character a box torso when the arms are lowered, but is also incredibly easy to work with as you are dealing with straight edges. Modeling at a perfect 45 degree angle can be easier to rig, but a touch awkward to look at. When not dealing with one of these standardized rigs I like to relax the arms a bit from a 45 degree pose, basically dropping the hands inward a touch with the back of the hands facing outwards. To me this leaves the character looking natural and takes away any stiffness from the usual poses (Fig.20).

Using the same technique create a box for the neck, extruding edges from one edge to follow the length of the neck from chin to clavicle, and working from there horizontally to create the rough shape of the neck. To mark the area I also rough out the general length of the trapezius muscle, which helps give an idea of where the deltoids will begin.

The general idea here is that we will be creating the character's body under the armor, which will then be sculpted as a basis for the real armor pieces and organic sections in between (Fig.21).



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From here extrude edges from the base of the clavicle all the way down to the waistline, adding slight indications of where the chest will protrude. Using the side reference shot as a guide, begin to block in a polygon loop for the entire waist. This quickly helps show how wide the character will be and will also act as an anchor for connecting edges to the chest and legs (Fig.22).

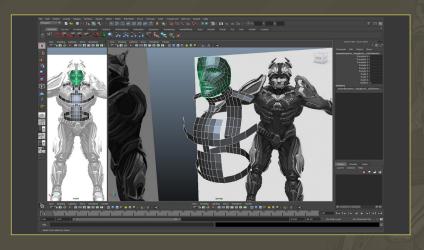
Next begin widening out the chest and stomach. For the most part, the stomach should be practically cylindrical with loops running horizontally the whole way around. The edges making up the bottom of the pectoral muscles, however, will carry through into the bottom of the deltoids and around the back into the spine. This helps define the armpit area and the mass for the shoulders that is created when the arms are raised or lowered (Fig.23).

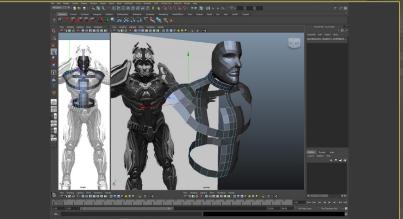
Define the deltoid mass. I like to create a loop that circles the upper portion and loops around the arm. This is mainly from an animation standpoint that has carried over to my base model creation technique, but it also helps to define the valley where the clavicle, trapezius and deltoid meet (**Fig.24**).

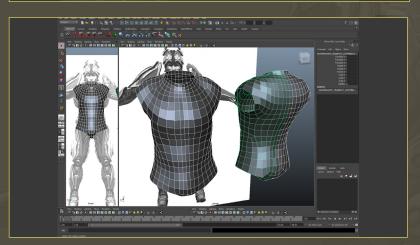
To complete the body the rest of the work is really just filling out these major points that we have defined with clean topology, keeping the mesh equally dense and composed of four-sided polygons. Much like the shoulders, define the hips with a loop that will circle the legs. Continue the edge flow of the shoulders across the entire back (**Fig.25**).

Fig 26

When it comes to hands treat them as if they are an entirely new object. Rather than working from a character's wrist to the fingertips, begin by building a finger. The first step is simple: make a cylinder and delete the end caps. Add a few edge loops around the finger to retain mesh fidelity when it becomes subdivided. This initial piece can be as complex as you want. Some artists are happy with a four-sided finger; I like to go a little heavier and hover around eight edges (Fig.26).







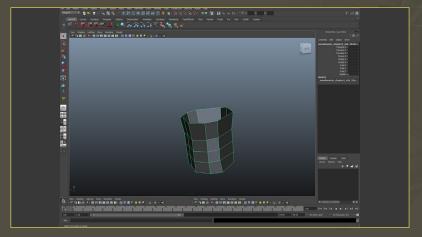


Fig 25



out the rest of the finger. Rather than modeling the finger straight, try to give it a slight curve. This will give the finger a more natural feel and help you visualize the bends. For the knuckles, cut into the faces that would need a protrusion and push the center loop out just a touch changing the silhouette ever so slightly in this way helps get rid of the "sausage fingers" look (Fig.27).

Put fingernails on your fingers by selecting faces near the tip of the finger and in-setting them with a bevel. After you have done this grab the edges closest to the nail base and overlap the nail geometry creating the mass near the cuticle. I usually sway from this type of detail in a base mesh, but it can easily be flattened out in ZBrush or be used to hint at anatomy beneath our character's under-armor suit (Fig.28).

Next, take the finger that you created and duplicate it three times. Keep the finger that you created as the middle or ring finger, then adjust the different fingers' length. You'll notice that the fingers on a human hand are not the same length. In this example you can see the right hand, so the fingers will increase in length from the pinky to the middle finger with the index finger's tip lining up with the last knuckle on the middle finger (Fig.29).

After this, fan out the fingers as if they were stretching apart by rotating each one. Much like the previous step, stagger the fingers to offset the knuckle placement. You'll notice that when you make a fist your knuckles are not perfectly in line. Also connect the base of the fingers to create the thin webbing that would stretch in between the fingers near the knuckles. To give the hand a little more life, bend the fingers slightly at the knuckles, as if there was very little tension. This helps set landmarks on the fingers for sculpting and makes the fingers look less "boring." At this stage also add in more loops for the webbing near the knuckles to retain the model's shape when it becomes subdivided.

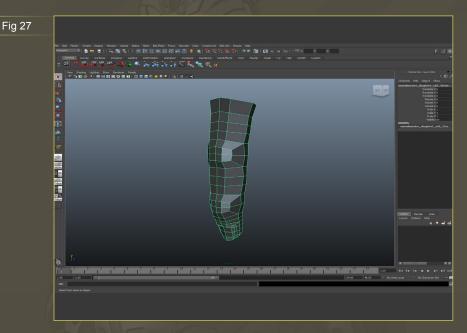
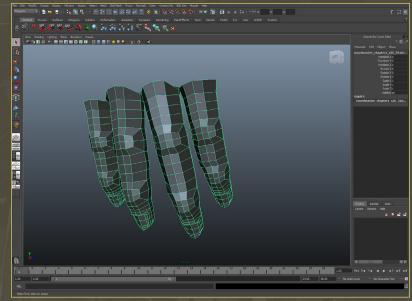
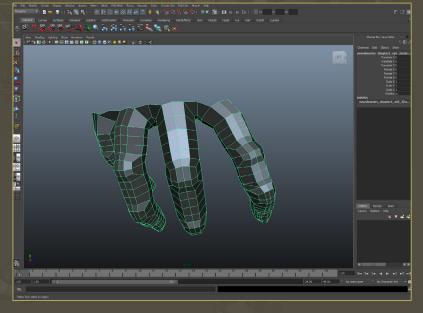


Fig 28







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Next begin building the fingers into the hand by making the knuckles and connecting them together. Try not to go too overboard here; basically fan out the border of the finger at the knuckle and join it with the webbing geometry created earlier. This creates a loop around the finger at the knuckle, which helps isolate each finger and defines the knuckle protrusion. If this hand were to be weighted in a game scenario, the palm is generally weighted to one bone with three bones for each finger. Because of this I tend to model with that in mind – leaving a defined edge that would be dominated by the hand bone with enough geometry between the hand and first knuckle on the finger to retain shape when bending during animations (Fig.30).

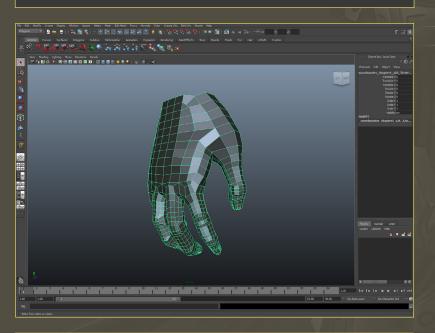


Fig 31

Using the edge extrusion method, begin to build out the palm and back of the hand. Follow the same rule as you did for the fingers; you usually don't want them perfectly flat and straight. Try to show the meat of the hands by forming pads on the outer edges with a dip in the center where it is mostly flesh on bone. For the back of the hand you want it to be rather flat (as in not defining veins, knuckles and the metacarpals) but to curve down towards the palm slightly on the inner and outer edges.



Fig 32

From here continue extruding edges to build out the back of the hand to the wrist. On the palm try to begin the edge loops for the thumb as soon as you can. The thumb will affect a large part of the hand as it has a wide range of motion that requires it to collapse and compress on the palm and back of the hand. Defining the flesh that creates the base of the thumb, reaching into the center of the palm, can be greatly beneficial for this deformation. Try to keep the same edge that would run down the center of the fingers, as if it were cutting the finger in half, into the thumb. This helps define the webbing and muscles between the index finger and thumb that will do most of the stretching and squashing as the hand spreads apart or makes a fist.

Next create the thumb. Try to make the base of the thumb have the same number of edges as the fingers so that you can duplicate a finger tip, move it into place and easily connect it to the rest of the hand. By duplicating the faces of a fingertip you can modify it quickly to create the broader tip of the thumb as well as the more bulky knuckle. Connect the thumb's tip to the hand by bridging edges. Divide the thumb with a few edge loops, creating a taper from the hand to the knuckle (Fig.31).

Finally, connect the hand to the rest of the arm. The key part to keep in mind is how the hand tapers into the wrist and how the heel of the palm drops down from the inner forearm. From here, extrude edges out of the wrist and continue to the elbow area, usually defining the subtle twist and bulk of the muscles that the forearm would create (Fig.32).

Place the hand roughly where it should sit in a relaxed position. For the most part the character's elbow should touch the bottom of the ribcage and the fingertips should rest near the middle of the upper leg when fully relaxed. This helps you visualize the character's proportions quickly and will allow you to easily piece together the rest of the upper body (Fig.33).

Much like you did with the face and body mirror the hand as an instance to give a nice quick preview (Fig.34).

Next create a quick approximation model of where the character's foot can go. This can be anything as in this case we are going to create the boot as a high poly object in a future step. This is simply a way to make the character look less goofy as a character with no feet can really trick the eye into thinking that the proportions are off (Fig.35).

Next the process of connecting the arm to the body begins. Keep an eye on the boundary edges of each piece (the forearm and the arm hole) as we will want them to be even. Now is a Fig 33

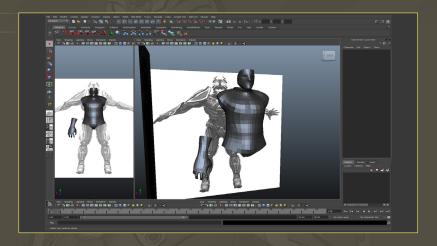


Fig 34

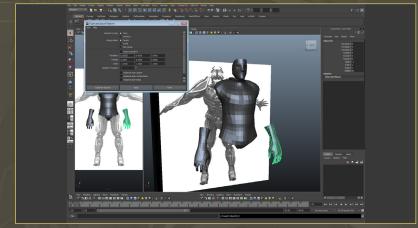
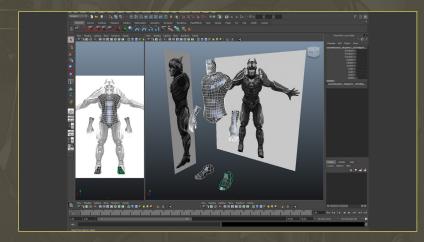


Fig 35

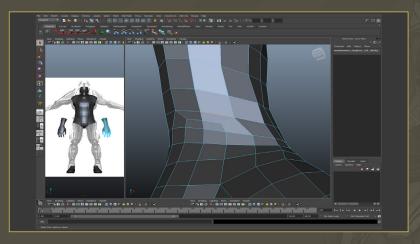




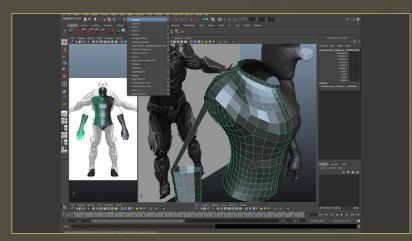


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good time to add or collapse edges as needed. You can select a boundary by accessing Select > Select Border Edge Tool. This will select any open edges after double clicking one of the edges in the loop. In this case I need to add edges to my torso (Fig.36).

To make the amount of edges equal for the arm and torso you will need to collapse a few edges around the wrist by using Merge or Merge to Center in the Edit Mesh tab. Once the edges are collapsed this will create an undesirable triangle. This can be corrected by connecting two triangles with a horizontal edge that runs around the wrist (Fig.37).

Next extrude the boundary edge of the forearm to roughly where the character's elbow will be, checking all angles of the extrusion to make sure that there is no awkward bend in the arm (Fig.38).

Next extrude the outer edge to meet the tip of the deltoid area. The idea here is to block out the length of the upper arm and elbow. I find that it is easier to keep the base mesh clean if you do not factor in the twist of the arm in the geometry. The twist of the muscles can be shown in the sculpt later and propagated into the low poly version much later (Fig.39).

The next step is to attach the body to the arm. First select the body and the arm, then navigate to the Combine function again. As you can see this will also carry the change over to the instanced half of the body. Be sure to keep the history of this object as killing that off will ruin the instancing needed for the opposite side of our body (Fig.40).

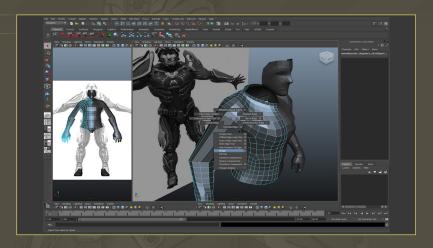
Fig 39

Fig 37

Fig 38

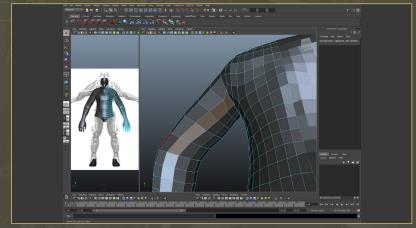
Next use Merge to connect the recently created edge to the nearest edge on the torso (Fig.41).

Fig 41



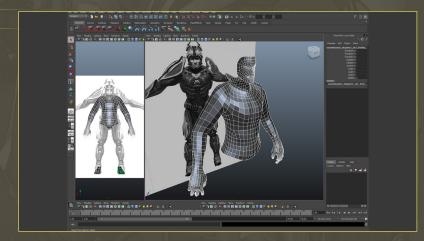
Since the arm and torso have the same amount of edges on the boundary, it is easy and simple to create the rest of the upper arm by selecting the bridge function to connect them with a new polygon. You can select Bridge either by pressing Shift + right click while in edge mode or by navigating to the Edit Mesh window at the top of your screen. Continue this process around the entire arm (**Fig.42**).

Fig 42

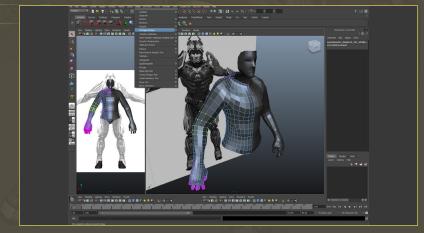


To soften up the elbow area and avoid any pinching when the model is subdivided in ZBrush, select the loop of vertices that make up the actual bend in the arm (**Fig.43**).

Fig 43



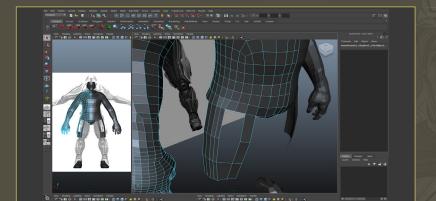
Next expand the vertex selection by pressing ">" while in vertex mode. This will add adjacent vertices to your selection radially. With all of the vertices selected in the elbow region, use the Average Vertices function to relax the area around the elbow and give us a smoother transition (Fig.44).





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Now move onto the legs. For this character, as mentioned earlier, we are just going to focus on the actual leg and not the feet as the design shows that from the knee down the character is practically all armor plating (this we will be covered in our high poly modeling section).

Grab a few edges on the hips and extrude down to where the knees would roughly be. From here

begin to build a loop around the leg, of course, using the front and side references as a guide

(Fig.45).

Fig 47

Fig 48

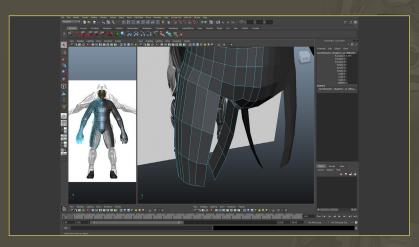


Fig 46 Do the same for the inner thigh, extruding an edge from the crotch down to roughly the same area as the opposite side, adding the same amount of horizontal edges so that both sides can be easily connected (Fig.46).

Use the bridge function to connect both sides of the leg that you have created and add a few vertical edges to pull out and add some bulk to the upper leg to roughly match the side reference (Fig.47).

Add vertical edges running down the front and back of the leg to match the amount of boundary edges of the hips. This is basically the same process we followed for connecting the arm, just that the amount of edges for the body shouldn't be changed (Fig.48).

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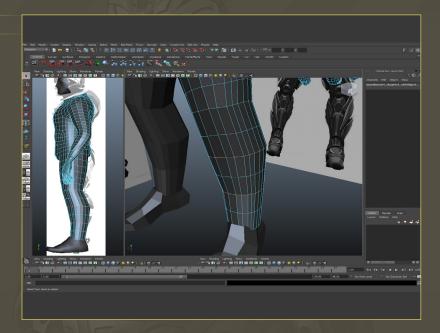
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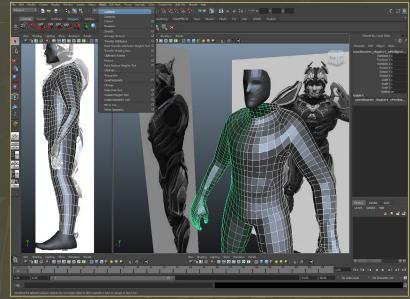
Roughly block out the shin area, extruding edges from the upper leg/knee area. Extrude the edge fully down to the ankle, and add horizontal edges to round out the shape and even out the polygon distribution. Again, this area is mostly just to assist your eye in seeing the character's proportions as it won't be modified heavily in future steps (Fig.49).

Fig 49



Next, just like you did for the face model, grab both halves of the body and select Combine and delete the history of the new object. Grab the center edges and merge them together to create one consecutive mesh. Check your mesh by pressing Shift + right click > Polygon Display > Toggle Border Edges. This will show all of the open edges of your model by "bolding" them. The only edges highlighted should be the neck and the holes near the ankle. If not, make sure that you merge these other edges together before moving on as it could cause problems when subdividing in ZBrush. Holes in the middle of a torso are hard to work around (Fig.50)!

Fig 50



This completes our base mesh modeling section. From here you will export the model to be used in ZBrush where you will quickly sculpt a roughly armored character, build these armor pieces more cleanly in Maya and move on to polishing your sculpt (Fig.51).

Fig 51



#### GAVIN GOULDEN

For more from this artist visit: http://www.gavimage.com/ Or contact him at: gavin@gavimage.com



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